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Daniel C. Tosteson

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# Harvard Medical

ALIIMNI BILLIFTIN

In This Issue

URDER, MAYHEM, AND MORTUARY—EACH FIGURED LARGE IN THE NINETEENTH-century edition of Harvard Medical School. The murder of physician George Parkman on School premises in 1849 filled the newspapers of the time, as did the mayhem of medical students collecting anatomical specimens from freshly dug graves. Yet a more positive focus on mortuary balanced these morbid facts: the tradition of the dead teaching the living through the Warren Anatomical Museum.

Most of medicine—and much of this institution—has been transformed since those early days. Today's students, for example, can learn anatomy without having to piller corpses from cemeteries. And today's patients need not endure the bloodletting practices and questionable tonics of their physicians; instead they can benefit from a dizzying array of medical advances, many the legacy of knowledge gained by generations of avid anatomists.

Some HMS traditions do endure, certainly; one of those has been the *Harvard Medical Alumni Bulletin*, with its rich, 82-year history. That history is taking on a new chapter, and this issue marks the beginning of several transitions for the magazine. As Steven Weinberger '73 mentions in his President's Report, the next issue will bear noticeable alterations, including a redesign, color throughout, and even a new title, *Harvard Medicine*. Those changes are exciting. One change we regret to report, though, is the stepping down in June of William Bennett '68 after five three-year terms as editor-in-chief.

When Daniel Federman '53, then director of alumni relations, asked him to take on the role fifteen years ago, Bill, like other HMS graduates who cannot bear to deny a request from Dan, accepted. Bill was perfect for the role. He had interrupted his residency to launch a medical writing and editing career. In addition to coauthoring a book on the physiological factors controlling weight, he wrote numerous articles on health, taught science writing, and served as editor for science and medicine at Harvard University Press and as editor of the Harvard Health Letter. By the time he returned to clinical medicine—undertaking a residency in psychiatry in the 1990s—he possessed a wealth of life experiences to inform his work as a doctor. He remains a sought-after psychiatrist.

Bill has an extraordinary gift for leavening science with literature to bring fresh meaning to medicine. His introductory columns and his occasional articles in this magazine—including one in this issue—provide evidence of his lyrically deft touch. And his intelligent stewardship of the *Bulletin* helped make it a magazine that truly celebrates the School and its graduates; as our ambassador, he served with distinction. We are indeed in his debt.

Henry E. Histoul

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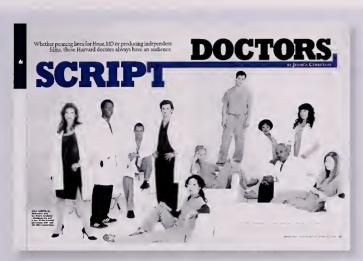
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A short man standing a few feet away fixed me in his gaze. I nodded. He nodded. Then he stepped up to me and barked, "You a producer?" When I replied that I wasn't, he abruptly turned and raced away, in search of the real thing.

NORMAN D. LEVINE '56

## Walk of Fame

Your Hollywood issue recalls my own experience with "the industry." No, I'm not an actor, nor am I a consultant to the dream factory. From 1976 to 1991 I was chief of radiology at Hollywood Presbyterian Medical Center, one of the first hospitals in Los Angeles and for a time the hospital to the stars. Many old-time actors and movie people maintained a connection to the center. I'll resist the temptation to drop names, but very nice people, all of them.

One of my patients, an actor who had played a key role in The Manchurian Candidate, gave my wife, Morelle, and me a membership into The Academy of Science Fiction, Fantasy & Horror Filmsa lovely gesture. And so we attended the Saturn Awards, held at the Screen Actors Guild, then on Sunset Boulevard. It was a grand, star-studded eventheady company for a mere physician.

At one point I was standing in the lobby among faces familiar from movies and television. A short man standing a few feet away fixed me in his gaze. I nodded. He nodded. Then he stepped up to me and barked, "You a producer?" When I replied that I wasn't, he abruptly turned and raced away, in search of the real thing. Any illusions I may have had of status in that crowd thudded to the floor. I thought about calling after him, "But I'm a doctor!" to recover some sense of importance. But that would have only compounded the deflation.

Then another Hollywood moment changed my view. You may remember a TV series called Trapper John, MD, a spinoff of M\*A\*S\*H. For several years our parking lot and office building served as the shooting location for the series one day a week. The crew would arrive very early and often shoot for hours. The activity provided us onlookers with much entertainment, especially the sight of the many attractive young women carrying clipboards and trying to look busy. Most of the action, in fact, consisted of people running around doing tasks that no one seemed able to explain.

One evening I watched a scene being shot that consisted of Trapper John emerging from our generic-looking office building and walking about 20 feet to his funky, graffiti-covered van. The director had the poor guy repeat what looked to me like the identical walk at least a dozen times.

The lesson I learned from Trapper John, MD is this: Pretending to be a doctor is boring. Actually being one is anything but.

NORMAN D. LEVINE '56 BRENTWOOD, CALIFORNIA

# **Quality Time**

Congratulations on the Spring 2009 issue, a classy and interesting edition of

I was intrigued by the comments of some of your readers in the Letters to the Editor section on the new realities in the practice of medicine. While I agree with the need for more general practitioners, we are not likely to see a significant change in the numbers until reimbursements from government agencies and insurance companies recognize the value of these doctors' time as equally as they recognize the value of procedures.

The new reality that comes under the heading of "quality of care" will affect all doctors, particularly surgeons. We have already seen a parade of healthcare-quality agencies, quality improvement organizations, and, most recently, the P4P, or pay for performance, movement. While they all sound good and may prove beneficial, they're merely additional layers of reporting and constraint on doctors' judgment and decision-making. They also offer further mechanisms for reducing doctors' incomes, which are already threatened. Before my retirement, I always worked long and hard to give the best care and obtain the best results, but sometimes failure is inevitable.

ARMAND LEFEMINE '52 CENTERVILLE, MASSACHUSETTS





# THE BEAUTY OF THE BEAST

The article "Design For Life" in your Spring 2009 issue cited the promise some endangered species carry in offering potential clues to curing human diseases. By inference many other "helpers" may one day benefit people. The author, Eric Chivian '68, makes the case for preventing these animals' extinction by appealing to our narcissism: How can humans benefit from these creatures?

To accept his appeal means turning our attention to the future. Alas, there's the rub: "Me, now" is more than a slogan. It describes a mindset, one that must be changed. The language of "later" is neither widely understood nor widely valued. Nor, to my knowledge, is it taught.

Which leads me to inquire about medical ethics, present and future. Is this subject discussed in the context of a population that's going on 7 billion? Is there any obligation to keep humans alive to senility and beyond?

How do assisted reproductive technologies that lead to multiple births factor in? Where does ethical thought take us when illnesses drain family finances and society's resources?

Do, please, consider shining light on these issues by presenting an article on the status and reach of medical ethics.

LENORE C. FRAZIER (WIDOW OF HOWARD S. FRAZIER '53) WINCHESTER, MASSACHUSETTS

## Affair to Remember

The letters in recent issues from Massad Joseph '77 and Mark Klausner '77, two school chums from HMS, jogged my memory of the Great Grade Boycott of 1973. Despite Mark's having little recollection of the events, there very much was a grade boycott. I confess I was one of the former radicals who organized it. (Don't forget that many of us were products of the sixties and the anti-war movement.)

My recollections of the events jibe with Massad's memories. I also recall the class meeting in which Dean Robert Ebert informed us that we could be replaced. One classmate stood up and retorted that we were a "national resource" and not easily replaced.

My proof of the boycott is the old three-ring binder labeled "Boycott" that I saved from my medical school days; the code number 137 is written on the inside cover. Those of us who took part in the boycott pledged to sign our tests using only our code numbers, and the keeper of the codes would divulge only the identities of those who had failed the test. All others agreed to accept a "pass" grade, regardless of how they had performed.

Although it seemed like most of us talked about joining in, or at least that's what we said to each other in public, our class was politically diverse and perhaps not everyone participated. That might explain why some people earned a real grade rather than pass or fail—if the School knew their identities.

I don't think the impetus for the boycott lasted long, and I think the honors/pass/fail system was implemented for us the following year. But I have less recollection of the second-year experience, aside from our Second Year Show, "The Effects of a Six-Day Week on Ebert Coli." (I did keep a script and playbills from our Fourth Year Show—"Ship of Tools"—which was a sequel to the second-year production.)

JAY H. HERMAN '77 GLENSIDE, PENNSYLVANIA

# Dr. Smith Goes to Washington

1TH HEALTH CARE REFORM topping the must-do agenda of the nation's leader, the Obama administration has enlisted several HMS alumni to help transform the way this country delivers medical care. Here's a roster of some of those graduates.

#### David Blumenthal '74

National Coordinator for Health Information Technology, U.S. Department of Health and Human Services. Blumenthal, who has taken a sabbatical from his HMS position as the Samuel O. Thier Professor of Medicine in the Institute for Health Care Policy at Massachusetts General Hospital, was the senior health advisor to the Obama for America campaign in 2008.

#### Ezekiel Emanuel '85

Special Advisor for Health Policy to the Director of the White House Office of Management and Budget. To serve in this new position, Emanuel has taken an extended leave from his role as head of the Department of Bioethics at the Clinical Center of the National Institutes of Health. A widely respected researcher and scholar on bioethics, Emanuel has served on the National Bioethics Advisory Commission. He was a member of President Clinton's Health Care Task Force.

#### Margaret Hamburg '83

Commissioner of the U.S. Food and Drug Administration. Hamburg assumed her new position after nearly nine years of service at the Nuclear Threat Initiative, a foundation dedicated to reducing the threat that nuclear, chemical, and biological weapons pose to public safety. Her previous positions include assistant secretary for policy and evaluation in the U.S. Department of Health and Human Services and New York City's health commissioner.



Sachin Jain '06

Special Assistant to the National Coordinator for Health Information Technology, U.S. Department of Health and Human Services. A medical resident at Brigham and Women's Hospital, Jain is a member of the faculty of the Institute for Strategy and Competitiveness of Harvard Business School. As a medical student, Jain helped found Improve-HealthCare, an international organization that aims to educate physicians about health care systems.

#### Joshua Sharfstein '96

Principal Deputy Commissioner of the U.S. Food and Drug Administration. Sharfstein had most recently served as health commissioner for the City of Baltimore in Maryland. While there, he won recognition for innovative programs that sought to expand literacy efforts in pediatric primary care, increase influenza vaccination of health care workers, and enhance access to treatments for opioid addiction.

#### Yvette Roubideaux '89

Director of the Indian Health Service in the U.S. Department of Health and Human Services. Roubideaux, a former assistant professor of family and community medicine at the University of Arizona College of Medicine, has conducted extensive research on American Indian health policy and health issues, especially diabetes. While in Arizona, she also co-directed the Special Diabetes Program for Indians Demonstration Projects, an effort that involved dozens of American Indian and Alaska Native communities.

# Second Sight

LOYD M. AIELLO REMEMBERS A time in the 1960s when half his patients went blind every year. Mostly young adults, they suffered from a complication of diabetes in which weak, leaky blood vessels proliferate in the retina, leading to hemorrhage and vision loss.

Today the vast majority of patients with this disease—diabetic retinopathy—retain their vision, thanks to a treatment Aiello, an ophthalmologist, pioneered with his father-in-law, the late William Beetham, in 1967. Aiello received the Warren Alpert Foundation Prize for that work during a ceremony at the Joslin Diabetes Center in September.

Retinopathy develops when blood flow slows in the retina, compromising vessel walls. As a result, blood leaks and

pools in the tissue instead of reaching its destination. Deprived of blood flow and nutrients, other regions of the retina release factors that stimulate the growth of new vessels, which also are weak and leaky, perpetuating the problem.

By studying thousands of retinas, Aiello and Beetham observed something curious: Patients with extensive retinal scarring from other diseases did not go blind as quickly as their peers. This finding provided the first major clue about how to stop this vicious cycle.

"We decided to mimic the scarring observed in these patients to halt the proliferation of blood vessels in other persons with diabetes without significantly compromising the visual field," says Aiello, now a clinical professor of ophthalmology at Joslin.

In 1967, the team took advantage of new laser technology to create scars in the retinas of young women and men without destroying the entire eye. Working in a small room at Joslin that doubled as a broom closet, the researchers developed a way to focus a parallel beam of light on each patient's retina, creating several hundred lesions on tiny regions of tissue. The patients remained awake for this laser surgery.

After presenting preliminary results at a major diabetes conference, Aiello helped organize the Diabetic Retinopathy Study, a multicenter clinical trial for the National Eye Institute, in the late 1960s and 1970s, to rigorously test his technique, known as scatter or panretinal photocoagulation. The success of the project spawned additional clinical trials, which allowed Aiello and others to refine the method—and set a new standard for diabetes care.

According to the World Health Organization, diabetes is projected to affect 366 million people by 2030. As incidence rises across the globe, Aiello is working to ensure that patients everywhere have access to the latest diagnostic tools and treatments in the future. He collaborated with Beetham Eye Institute colleague Sven-Erik Bursell to start the Joslin Vision Network, which brings advanced medical care to people with diabetes including those in remote regionsthrough digital imaging. The images are sent to Joslin or Joslin-certified reading centers for analysis and, based on the resulting report, health care providers at the remote sites dispense advice and treatment to their patients.

"Our only hope for handling the impending diabetes pandemic is telemedicine—remote-site imaging and delivery of treatment to patients wherever they happen to live," says Aiello. "We're devel- 5 oping and automating this model." -

**EARLY VISIONARY: Working with** aser treatment that has since preserved the eyesight of count-ess people with diabetes.

Alyssa Kneller is a senior multimedia specialist at Harvard Medical School.

# Eyes on the Prize

STRING OF FINDINGS ABOUT some of nature's tiniest structures has resulted in what many consider the scientific community's biggest honor. In October, Jack Szostak, HMS professor of genetics at Massachusetts General Hospital, won the 2009 Nobel Prize in Physiology or Medicine. Szostak, who shares the prize with Elizabeth Blackburn of the University of California, San Francisco and Carol Greider of Johns Hopkins University School of Medicine, was recognized for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase.

Some 70 years ago, scientists hypothesized that the ends of chromosomes had protective caps that prevented them from fusing together inappropriately, yet the theory had never been tested. By 1980 Blackburn had discovered that these caps, called telomeres, were made up of DNA sequences in a single-cell protozoan but didn't know whether this feature occurred in other organisms. After meeting at a research conference that year, she and Szostak teamed up to determine whether the same sequence was present in yeast cells. It was.

Further research by the investigators and Greider, then a graduate student, showed that cells must be able to replenish telomeres to function properly. Although they didn't know it then, such



END ZONES: Jack Szostak, who won the Nobel Prize for the discovery of how telomeres and the enzyme telomerase protect chromosomes, has since turned his research attention to the molecular origins of life.

findings have since played an important role in helping researchers understand the processes behind cancer and aging. Szostak, who is also an investigator at the Howard Hughes Medical Institute, has since turned his research focus to the molecular origins of life.

Szostak's award brings the number of Nobel prizes won by HMS faculty members to 13. His work, says HMS Dean Jeffrey Flier, "showcases the fundamental importance of basic science and how it can open up an entire field of investigation."



# Leading Lights

Paul Farmer '90 (near left), the Maude and Lillian Presley Professor of Social Medicine at HMS, was recently named the new chair of the Department of Global Health and Social Medicine. He succeeds Jim Yong Kim '86, who became president of Dartmouth College in July. "As an international leader in global health and social medicine and an outstanding researcher, teacher, and clinician," says HMS Dean Jeffrey Flier, "Paul is uniquely suited to lead this department."

# Story Core

OME AUTHORS HAVE BEEN composing stories since they could hold a pencil, so natural and insistent is their gift for writing. Others—the literary late bloomers—may take decades to uncover their talent. For Jerome Groopman, that moment came in his early 40s when he found himself, inexplicably, on the brink of a midlife crisis.

"I was desperately in love with my wife. And I had no interest in sports cars," said Groopman, the Dina and Raphael Recanati Professor of Medicine at HMS and Beth Israel Deaconess Medical Center, speaking in June at the Alumni Day Symposium, "Doctors as Writers." Rejecting the usual alternatives, Groop-

There is a special thrill in hearing the story behind a writer's stories. The nearly 200 attendees at the symposium, held beneath an enormous tent on the Quad lawn, were thoroughly engaged as they heard Groopman and three other well-known physician-authors—Perri Klass '86, Elissa Ely '88, and Stephen Bergman '73 (also known as Samuel Shem)—recount how they got their start as writers. What was striking, as George Thibault '69, symposium organizer and president and CEO of the Josiah Macy, Jr. Foundation, noted in his introduction, was their variety.

"I got my start as a writer growing up in a household with a mother who thought everyone should be a writer," said

that this loss, and her quest to understand it, haunted her early stories and still drives her writing. "After 46 years, I'm still writing about my father," said Ely, a psychiatrist and a regular contributor to The Boston Globe and National Public Radio.

It was later in life, during a Rhodes scholarship at Oxford that had him working in a laboratory studying cockroaches, that Bergman decided he wanted to be a writer. When he told the laboratory director of his decision, the man, with characteristic British aplomb, responded, "Well then, have a sherry."

Despite the writers' diverse beginnings, common themes ran through the tales. Several of the speakers described in agonizing and amusing detail their early disappointments. Klass, now a professor of journalism and medicine at New York University, received multiple rejection notes before publishing her first article.

Groopman described making the rounds of New York editors to sell his first book. One-an older woman with a bouffant and red nails who looked, according to Groopman, as if she had just flown in from a canasta game in West Palm Beach—said, "Doctor? I'm sure you're a very good doctor." She then went on to tell him what was wrong with his stories, namely that their characters did not demonstrate the proper number of epiphanies. Ironically, the story that so impressed The New Yorker editor was a tale about an arrogant cancer patient who has a remission only to realize how empty didn't end happily," Groopman said.

his life is. "It really was an epiphany that Doctors hear and live out stories like that every day, which is why Klass said she prefers writing fiction to nonfiction. "When you write fiction you can choose the ending," she said. "The hardest thing about medicine is that you cannot always choose the ending."

Klass, who has two siblings, both writers.

man decided to write. Sitting at his kitchen table in the dusky hours before dawn, he banged out three stories that, after much reworking, would appear in his first book, The Measure of Our Days. One of them, a tale about a wealthy cancerridden patient, would so impress the then editor of The New Yorker that she offered him a regular gig as staff writer. "Tina Brown said my story was hot," Groopman said.

In fact, all three would turn their mother's love of stories to their advantage. "You could always get out of walking the dog," Klass explained, "by saying, 'Mom, I just had an idea I need to write down."

Ely was also deeply influenced by her family and in particular her father, who died when he was 35 and she was 5. "He disappeared into Memorial Sloan-Kettering and never came out," Ely said, adding

Misia Landau was a science writer for Focus from 1994 to 2009.



# On the Road

HEN UNINSURED AND UNDERINSURED PATIENTS CAN'T MAKE IT TO A physician's office for basic preventive counseling and screening tests, a group of health care providers hits the road—and brings those services to them. That's the premise of Family Van, a mobile health clinic that has been providing health care to medically disenfranchised Bostonians since 1992. Now a study by Nancy Oriol '79 and other HMS researchers shows that the Family Van doesn't just have the potential to save lives—it saves money, too.

"People talk about the value of preventive measures all the time, but no one has ever really captured the important contribution of nontraditional preventionbased programs like the Family Van," says Oriol, who is the program's cofounder, the HMS dean for students, and an HMS associate professor of anesthesia at Beth Israel Deaconess Medical Center. "This value is underscored by the unique role that mobile health plays in reducing disparities in health outcomes, increasing access to care, and enhancing our ability to reach out to particularly vulnerable, at-risk communities."

The Family Van provides screening, testing, and education for nutrition, weight management, diabetes, heart disease, pregnancy, sexually transmitted diseases, and other health concerns. To better quantify its cost-effectiveness, Oriol and her team used published data from the National Commission on Prevention Priorities, which assigns values to a broad array of preventive practices, as well as published data on the cost savings of preventing avoidable emergency department visits, to develop an algorithm that calculates a return-on-investment ratio.

The results, published in the June 2 issue of BMC Medicine, were impressive: For 2008, the Family Van had an estimated return-on-investment of \$36 for every dollar spent. These numbers reveal not only the cost-effectiveness of the Family Van, but also provide a model for other preventive-services programs. Researchers hope to have the calculator used in the study available online within a year.

# Web Resources

Alumni Association. The Harvard Medical Alumni Association has revamped its website to include additional alumni news, information about events, links to alumni benefits, and opportunities for social networking. Visit alumni.hms.harvard.edu; for links to class pages and social networking groups, click on "Community."

Conflict of Interest, HMS Dean Jeffrey Flier has written a white paper exploring conflicts of interest in academic medicine. The report is one part of the School's Integrity in Academic Medicine Web, a collection of policies, information, committee statements, and news. To access the website, visit hms.harvard.edu/public/coi; to read the report, visit hms.harvard.edu/ public/coi/dean.

Match Day. In March, nearly half of the members of the HMS Class of 2009 learned they would be staying in Massachusetts for at least part of their training. The largest percentage of the class—24 percent—matched in internal medicine, followed by dermatology, general surgery, pediatrics, and radiology. To learn where recent graduates are undertaking their residencies, visit alumnibulletin.med.harvard.edu/ connect/matchday/2009.php.

Obituaries. The Bulletin's reduced production schedule has swelled its list of alumni obituaries awaiting publication. To view recent obituaries as well as longer versions of previously printed notices, visit alumnibulletin.med. harvard.edu/obituaries.php. •

Be a Guiding Star The Bulletin will be undergoing notable changes to its format beginning with the next issue, and we hope you will participate in the magazine's continued evolution by joining our new Readers' Panel. As a member, you will be asked to engage in periodic online surveys about the magazine, to offer feedback, and to suggest content. To learn more and to sign up for the panel, visit alumnibulletin.med.harvard.edu/readerspanel.php or contact the Bulletin's editor, Paula Byron, at 617-432-7762 or paula\_byron@hms.harvard.edu. ■

# EDITORIAI

# Clean Bill of Health

# Dear Dad,

It was great seeing you and Mom last week at her birthday party. The kids loved playing with you. I know the pain from your hernia slowed you down a bit, but I'm confident the operation next week will go well.

I'm writing to follow up on your questions about Obama's health care reform. Sorry I couldn't give better answers at the time. What good is having a doctor and a health policy wonk for

a son if he can't help you understand health care reform?

Looking back on that moment, I think I was tripped up by the difficulty of laying out what I see as the core issues without boring you with the details. And of course you've read so much already. What could I add? But I failed to appreciate at the time that you weren't expecting me to recount the facts on insurance coverage or the causes of the impending bankruptcy of Medicare. You wanted to know whether you should be worried about the coming changes if the reform legislation passes.

So I thought I'd try again. And a good place to start might be: What should we be most afraid of? What's the worst that could happen?

The worst that could happen is that we could lose the services that repaired Mom's pinched spinal nerves, stopped your bleeding ulcer, cured your cancer, saved your premature grandchild, removed your

cataracts, and slowed the progression of your sister's Parkinson's disease. Actually, when you think back on how much our family has benefited from health care, we have much to be thankful for. So when Obama proposes to reform health care, we have plenty to be concerned about.

Even though our family's experiences with the most important parts of health care—saving life and limb—have been terrific, many people say that, overall, health care in this country is mediocre. Of course you've seen those report cards ranking U.S. health care lowest in the developed world. Having worked on some of those report cards myself—and having seen the care in other developed countries—I think those report cards exemplify what Mark Twain referred to as "lies, damned lies, and

statistics." I know all too well how those grades can be manipulated to produce the rankings that their creators preordained. This country's health care could certainly be better, but our family has direct benefited from truly remarkable health care.

So, should we be worried? Perhaps vigilant would be a better word. I'll tell you why I believe we can take heart.

Health reform will increase the number of Americans who have health insurance. With two of your sons potentially benefiting, you obviously agree this is a good thing. Jeff now chooses

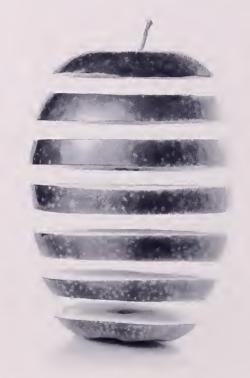
> to be uninsured rather than devote half his income to pay for individual health insurance, and Peter doesn't know what he'll do if he can't find a new job before his COBRA runs out.

The uninsured have no insurance because they cannot afford it. So regardless of whether the plan is a public one, taxpayers must fund the new insurance. Spending more public funds means adding to the national debt or increasing taxes. You made sure I understood before the age of ten that neither option was good. And even though I now recognize why we don't want either one, I'm also convinced that our country must increase health insurance coverage in order to stay competitive and support social stability. We'll need to do the hard work to find ways to pay for this, but in the long run, our country will be stronger.

But of course the term "public plan" has become code for an insur-

ance plan operated by the government. Our Reagan-era dinner conversations introduced me to your disdain for the American tendency to oversimplify government as good or evil. Nothing I've learned since has changed my view that government agencies can be incredibly inefficient and yet, at the same time, they're the only organizations that can be entrusted with truly public responsibilities. It's not about government as good or bad but about having government that works.

So whether the new insurance plan is actually administered by the government isn't important to me; I can see advantages and disadvantages either way. On this point most doctors disagree with me. They're afraid that a governmentrun plan will pay too little. This may be true, but on balance



I'd rather see my tax dollars spent on health care services than go into the coffers of private insurance companies. And pressure from patients and doctors will ensure that payment rates remain adequate.

If this were all that Obama's reform had in store for us higher national debt and petty arguments over who administers the benefit—then, as a current Medicare recipient, you would have nothing to worry about when it comes to health care reform. But there's more.

The other part of health care reform is cost containment. Health care costs are climbing at an astounding rate, and the reform includes provisions that try to contain those costs. On this score you should be more worried about what is not in the legislation than what is in the legislation. The legislation has no sweeping changes in how Medicare is structured. Instead the legislation gives Medicare permission to try some coston 10 percent of the population, so improving care coordination for the high-risk, high-cost patients must be part of the answer. Chances are that we will all be in that high-cost 10 percent at some point in our lives, and more than likely it will be near the end of our lives.

But deciding what is necessary isn't straightforward. And simply cutting the fees paid to physicians and hospitals doesn't help; it uses a sledgehammer to remove the tumor of overuse. The health care you've come to expect depends not only on payments to hospitals and doctors but also on investments in training programs, innovation at academic medical centers, and a biotechnology industry that pushes the envelope of what is possible. The proposed experiments would compel doctors and hospitals to work together to try to address the cost problem, and that's certainly good for your care.

# Deciding what is necessary isn't straightforward. And simply cutting the fees paid to physicians and hospitals doesn't help; it uses a sledgehammer to remove the tumor of overuse.

containment experiments. In other words, the legislators have proceeded cautiously. No dramatic changes to your Medicare.

Why is this experimentation worth worrying about? Well, in the near term, of course, it's fine. The people who wrote the legislation understood correctly that we don't know exactly how to contain costs without disrupting people's health care. So they moved slowly in some promising directions.

The problem is that if costs keep rising then something much more dramatic will need to happen. And any dramatic action will certainly affect your health care. What if Medicare cuts its rates? Most health care costs are spent on the salaries of people working in the field. Rate cuts to hospitals would mean higher unemployment and fewer nurses on the floor when you get admitted; fewer nurses would mean compromised care. Rate cuts to doctors would mean less access to services. Given the magnitude of the cost crisis, such dramatic cuts may be necessary. Precipitous rate cuts are what you should be worried about.

The key to cutting costs without reducing access to the services you need is to cut payments for unnecessary services. Few people realize that 70 percent of costs are spent

From a high-level perspective, the health-reform effort has been a remarkable example of democracy at work: a motivated president, an engaged electorate, and a legislature hounded by special interests. Given the complexities of the issues and the politics, the sausage they have made looks pretty darned good. So, to answer your question, you can relax: Your benefits won't change, and your health care won't change.

I support Obama's health care plan because it gives more Americans health insurance but doesn't threaten what you and Mom have for health care. Managing the debt will be important, but investing in the health of the population is worth that effort.

Love to you and Mom,

#### Tim

Timothy G. Ferris '92 is an HMS associate professor of medicine and pediatrics, medical director of the Massachusetts General Physicians Organization, and a senior scientist at the Institute for Health Policy at Massachusetts General Hospital. His brothers' names have been changed.

# PRESIDENT'S REPORT

# **Trading Places**

N THIS ISSUE, I'D LIKE TO HIGHLIGHT SEVERAL CHANGES TO both the Harvard Medical Alumni Association and the Harvard Medical Alumni Bulletin. Such transitions provide us with an opportunity to celebrate past accomplishments and the people responsible for them while also introducing new people and looking forward to new plans.

In the Spring 2009 issue of the *Bulletin*, we announced that George Thibault '69 would be stepping down as chair of alumni relations. It is impossible to capture in a few words the scope of George's contributions to the School and its affiliated hospitals. Before moving to New York City to take his current position as president of the Josiah Macy, Jr. Foundation, George spent several decades serving HMS through major clinical and educational leadership roles at Massachusetts General Hospital, the Brockton/West Roxbury VA Medical Center, Brigham and Women's Hospital, and Partners HealthCare.

coness Hospital and eventually at Beth Israel Deaconess Medical Center. A. W. is deeply committed not just to HMS but to its alumni as well, having served on the HMS Alumni Council from 2004 to 2008 and as president of the Harvard Medical Alumni Association for the 2006–07 term. We are indeed delighted that A. W. has accepted the position of chair of alumni relations, continuing a legacy of truly outstanding individuals who have served HMS in that role.

This is also an important transition time for this award-winning publication, as the current issue will be the last to carry the title *Harvard Medical Alumni Bulletin*. Future issues will be published under the name *Harvard Medicine*, providing recognition of the quality and impact of this publication that extends beyond the community of HMS alumni, faculty, and students. As the publication unfolds with its new title and appearance, we look forward to receiving feedback from our readers—both

We are delighted that A. W. Karchmer has accepted the position of chair of alumni relations, continuing a legacy of truly outstanding individuals in that role.



At the School itself, George has left his fingerprints everywhere—on countless committees and initiatives that he has led; on the Academy at Harvard Medical School, of which he was the founding director; and, of course, on alumni activities, as president of the Harvard Medical Alumni Association from 1998 to 1999 and as director and then chair of alumni relations from 2005 until this October.

On behalf of all HMS alumni, I want to thank George for his significant contributions and the impact he has had on the School, its students, and its alumni. On a personal level, I consider it a privilege to have worked with George during my tenure as Alumni Association president and during the many years we worked closely together as colleagues on the HMS faculty.

Following a search process coordinated by a committee composed of several Alumni Council members and a Dean's Office representative, we were pleased to select an outstanding alumnus and career-long HMS faculty member as the new chair of alumni relations—A. W. Karchmer '64. An internationally renowned specialist in infectious diseases and an HMS professor of medicine, A. W. also served for many years as chief of the Infectious Diseases Division at the New England Dea-

individually and through a new Readers' Panel—about how we can make the magazine as engaging as possible.

Finally, I wish to recognize the enormous contributions of William Bennett '68, who stepped down in June after 15 years as editor-in-chief of the *Bulletin*. I want to express my personal gratitude for all Bill has done to make the publication such an outstanding one. His wonderful writing skills and his ability to weave together the world of medicine with the worlds of literature, the arts, and history have allowed him to join with the editor, Paula Byron, in shaping the *Bulletin* into the exceptional publication it has become.

Steven E. Weinberger '73 is senior vice president for medical education at the American College of Physicians in Philadelphia. He can be reached at sweinberger@acponline.org.

HMS alumni, faculty, students, and friends are encouraged to join the Bulletin's new Readers' Panel, an informal advisory group to the magazine. To learn more, visit alumnibulletin.med.harvard.edu/readerspanel.php or contact the Bulletin's editor, Paula Byron, at 617-432-7762 or paula\_byron@hms.harvard.edu.

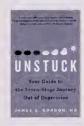
# BOOKS BY OUR ALUMNI | BOOKSHFIF

















# Turning Blood Red

The Fight for Life in Cooley's Anemia, by Arthur Bank '60 (World Scientific, 2009)

Written by a world-recognized expert on Cooley's anemia, a potentially fatal blood disease, this book provides new insights into the condition, which may lead to new therapies. A multidisciplinary guide that covers several fields, including hematology and pediatrics, it also details how Cooley's anemia serves as a model for understanding other human diseases. Bank further describes the emotional and medical impact of the disease on patients and their families.

# Dancing at the River's Edge

A Patient and Her Doctor Negotiate Life with Chronic Illness, by Alida Brill and Michael D. Lockshin '63 (Schaffner Press, 2009)

This collaboration between a doctor and his longtime patient chronicles their experiences as they negotiate treatment for her chronic autoimmune disease. The dual memoir presents both a dialogue and a personal journey toward a new understanding of the chronically ill and those who treat and are touched by them, including family, friends, and colleagues.

# Retired, Not Dead

Thoughts Plastic Surgical and Otherwise, by Robert M. Goldwyn '56 (Artnik Books, 2008)

In this wide-ranging collection of brief essays, Goldwyn shares his engaging

reflections on his career in medicine and life in general. With wit and wisdom, he offers his thoughts on topics as diverse as hospital politics, the Registry of Motor Vehicles, and shoe shopping. The author also holds forth on the plastic surgery field and his retirement from it.

#### Unstuck

Your Guide to the Seven-Stage Journey Out of Depression, by James S. Gordon '66 (Penguin, 2008)

This practical, easy-to-use guide is designed to help patients overcome depression without the use of antidepressants. The author, a psychiatrist, focuses on the benefits of food, nutritional supplements, meditation, exercise, Chinese medicine, and other integrative approaches, concluding each chapter with a carefully designed "Prescription for Self-Care." He also includes dramatic and inspiring examples from his own patients.

# Odd Man Out

A Year on the Mound with a Minor League Misfit, by Matt McCarthy '08 (Viking Adult, 2009)

A former college baseball player, the author was drafted by the Anaheim Angels in 2002. Here, he recounts his grueling year as a pitcher with that team's minor league affiliate, the Provo Angels, and shares the often bizarre and sometimes controversial—details of what goes on behind the scenes of our national pastime, from the dugout to the locker room.

# Testosterone for Life

Recharge Your Vitality, Sex Drive, Muscle Mass & Overall Health, by Abraham Morgentaler '82 (McGraw-Hill, 2009)

This authoritative, up-to-date guide helps male readers determine whether they have low testosterone, a common but frequently underdiagnosed problem in middleaged men. Morgentaler, a urologist and expert in sexual and reproductive medicine, also details the potential benefits of testosterone therapy for men, including increased vitality and virility, improved muscle mass, and better general health.

# Try to Remember

Psychiatry's Clash Over Meaning, Memory, and Mind, by Paul R. McHugh '56 (Dana Press, 2008)

Written in response to the loss of public confidence in psychotherapy resulting from the trend in what the author considers false "recovered memories," this book examines what went wrong and what must be done to restore psychotherapy as an honored therapeutic approach. McHugh presents patients, families, and mental health providers with insight and guidance on how to work together. He outlines the best practices in psychiatry, shows readers how coherent therapy functions, and provides a clear approach to accurate diagnosis and effective treatment.



# THINKING ZEBRAL

# **Internal Conflict**

E KNEW HIS ORGANS MIGHT ONE DAY FAIL. HE JUST didn't expect them to begin failing during his mid-twenties—especially after simply carrying a basket of laundry to the car. Yet on a late winter day in 2001, this young man, whom we will call Craig Hudson, was performing just such a task when he was stricken.

"I got this sudden pain in my throat," says Hudson, "then in my chest. Then I found it hard to breathe." He bolted up the dozen stairs to his apartment and for three days tried to catch his breath. But it wasn't just breathlessness; curious sloshing sounds were audible in his chest whenever he moved. Could it be pneumonia? A trip to the doctor brought puzzled looks from the examining physician.

"He kept asking me if I felt okay," says Hudson. "Then he ordered a chest x-ray." The image showed that Hudson's right

"He talked with me frankly," says Hudson. "He told me my symptoms and history put me beyond the scope of his hospital. But there was someone in Philadelphia he thought I should see." There, a physician at the Hospital of the University of Pennsylvania considered Hudson's history and quickly referred him to Reed Pyeritz '75.

Throughout the years and the confusion of symptoms, Hudson had researched each physiological calamity that had befallen him. He had investigated the treatments and diagnoses he had received, and he had studied the specialties of the doctors who had cared for him. Now he was scheduled to see Pyeritz. His research found that Pyeritz was the chief of the Division of Medical Genetics in the hospital's Perelman Center for Advanced Medicine and that he was an expert in diagnosing and treating heritable diseases of connective tissue. This,

The litany of medical problems grew, as did the number of perplexed physicians. Rounds of hospitalizations ensued, bringing a lung biopsy, more tests, and more uncertainty. Finally his surgeon could do no more.

lung was 80 percent collapsed, seemingly without any direct cause. Re-inflation proved difficult and recovery long.

An unexplained shoulder dislocation and a bout with Bell's palsy joined the list of mysteries. The palsy had been particularly unsettling—"I thought I was having a stroke," Hudson says—but a short course of steroids set him back on track. Then, two years later, another organ began to fail.

"I was mowing the lawn," Hudson says, "when I felt what seemed like a stomach cramp. Soon I was blinded by pain." This time doctors found that a spontaneous dissection of the artery to his left kidney had caused some tissue death.

The litany of medical problems grew, as did the number of perplexed physicians. A month-long tussle with a bad cough that produced blood-tinged sputum led Hudson to the emergency department of his local hospital. Imaging revealed more lung problems, this time in the left lung: decreased air capacity, a fluid-filled cavity in the lower region of the lung, and another, smaller collapse. In addition, nodules and some areas of opacity were visible on images of Hudson's lungs. Surgery removed the nodules, and tests showed them to be cancer free. A few months later, though, Hudson was again gripped by intensive coughing with more blood-laced sputum. And new nodules. Rounds of hospitalizations ensued, bringing a lung biopsy, more tests, and more uncertainty. Finally his surgeon could do no more.

Hudson thought, may be where I get my answer; this may be where I find out why my body parts keep giving out.

### Tissue of Cries

Barbara Bernhardt, a member of Pyeritz's close-knit team, remembers her impressions of Hudson on his first visit to the clinic. "He seemed frightened," she says, "but determined. We began to talk."

Bernhardt, a genetic counselor, helps guide Pyeritz's patients through questions of family and future. And she helps them develop strategies for incorporating a genetic disorder into their lives, including ways they can present their medical story to others to help normalize their daily routines.

"He was quiet," Bernhardt recalls, "but clearly knowledgeable, relating all that had led to his referral to our office. Then he said what I believe had been on his mind since learning he was to see Dr. Pyeritz: He was concerned he may have Ehlers-Danlos. And he was worried it might be 'the nasty kind.'"

Ehlers-Danlos syndrome is a constellation of gene-based disorders that ravage connective tissue, the biological scaffolding that helps give the body's skin, organs, and vessels their integrity and shape. For centuries before it gained its dual eponym, the syndrome was described only as a curious collection of symptoms. Around 1900, though, patient cases separate-

ly presented by physicians Edvard Ehlers and Henri-Alexandre Danlos to members of the Paris Society of Syphilology and Dermatology served to establish the syndrome in the literature and to usher in efforts to fully characterize it.

The disease was first described by physical manifestations: velvety, hyperelastic skin; hypermobile joints; and poor wound healing. But physicians soon were able to list other symptoms, including the development of calcified cysts under the skin and of "cigarette-paper scars," areas of mild trauma that imperfectly heal to resemble thin paper.

The syndrome's prevalence among populations with European ancestry and occurrences in families helped establish it as a heritable one that can take at least six distinctive forms. Each form brings hurdles to those with the syndrome, such as weak muscle tone, chronic joint dislocations, severe spinal curvatures, and, in the vascular form—the type that Hudson's research had him worried about—heightened risk of organ rupture and internal bleeding. Each form appears with differing frequencies. The most common one occurs in 1 in 10,000 to 15,000 people. The vascular form, however, surfaces a tenth as often.

Diagnosing the syndrome—and pinpointing its form involves genetic testing of a sample of a patient's tissue. Pyeritz would need to carry out such a procedure for Hudson. But first, he would need to talk with him and examine him.

"When the patient was referred, I reviewed his medical history," Pyeritz says. "His extracellular matrix seemed to have a fundamental defect. Much of the evidence pointed to Ehlers-Danlos and, from my reading, the rare vascular form. So I began the exam realizing I had a bias, but I soon saw many of the signs I was expecting." Pyeritz performed a skin biopsy.

The results confirmed his suspicion: Hudson had the vascular form of Ehlers-Danlos.

# **Ballooning Problem**

Pyeritz remembers well the first patient he saw with the vascular form of Ehlers-Danlos. It was in the late 1970s, while Pyeritz was a senior resident at the Johns Hopkins School of Medicine. He was working in the medical genetics clinic of Victor McKusick, a cardiologist whose interest in gene-based diseases led him to help found the field of medical genetics. To Pyeritz, he also was the godfather of heritable disorders of connective tissue.

It was, in fact, while Pyeritz was at Hopkins that McKusick's group found the genetic trigger to the vascular form of the syndrome. Later, mutations to the gene COL3Al, which directs the production of a collagen precursor, were identified as the fundamental cause. This genetic misdirection causes skin



hyperelasticity but also leads to severe compromises to the strength of internal organs and blood vessels.

"The boy was 12 or 13 years old," says Pyeritz of the patient he greeted that day at Hopkins. "I was examining some unusual scarring on his skin, when he said, 'Look, doc, what I can do.' The boy then held his breath and bore down. Out popped this mass above his clavicle. At first, I thought it was his lung."

But tests showed it was a pseudoaneurysm. With a touch of amazement still in his voice these many years later, Pyeritz recalls, "The boy had actually ruptured his subclavian artery and survived."

# Life Redone

With a firm diagnosis in hand, Pyeritz and his team are working with Hudson to help him deal with his disease. And Hudson, with an answer to his years of questions, now lives with a diagnosis that is sobering but oddly liberating. "Most people don't have to live with their own mortality," he says. "I now try to live a bit more, to make every moment of life worth it."

Pyeritz believes his ability to diagnosis Hudson's condition rests in large part on a dictum that he and his colleagues follow. "We assume that uncommon events have a common linkage," he says, "and that patients don't tend to suffer an array of rare, unrelated conditions."

Ann Marie Menting is associate editor of the Harvard Medical Alumni Bulletin. "Thinking Zebra" refers to advice many medical students receive when learning the art of diagnosis: "When you hear hoofbeats, think horse, not zebra."

# **Relative Perspectives**

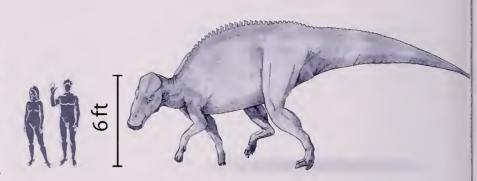
IGHTY MILLION OR SO YEARS AGO, during an ordinary day in the Cretaceous period, the genes of a Brachylophosaurus produced some collagen proteins inside the dinosaur's bones. When the plantmunching giant died, its corpse was entombed in the sediment of a river that ran through today's Montana. Now, researchers have identified eight fragments of the proteins clinging to one of those aged bones—millions of years after the proteins were expressed from the dinosaur's DNA.

The proteins, found on a three-footlong femur of a *Brachylophosaurus canadensis*, are the oldest to be extracted from a fossil, say the HMS and North Carolina State University researchers who reported the study in the May I issue of *Science*. The fragments show that the 30-footlong *Brachylophosaurus*, which means short-crested lizard, is more closely related to a chicken than to a lizard on the evolutionary tree.

The findings build upon an earlier study, in which the team found similar results in a 68-million-year-old *Tyran-nosaurus rex.* "This helps verify that our first discovery was not a one-hit wonder," says John Asara, who coauthored the studies on the *T. rex* and *B. canadensis*. Asara is an instructor in medicine at HMS and director of the Mass Spectrometry Core at Beth Israel Deaconess Medical Center.

### Location, Location

Many in the paleontology community consider the study's findings unsettling not for their reconfiguration of evolutionary relationships but because of the material relied upon for that reconfiguration. Current models say that soft tissue, DNA, proteins, and other biological material are replaced by minerals during fossilization, especially in fossils dating back more than a million years.



FOR THE BIRDS: Fragments of collagen proteins found on *Brachylophosaurus* bones suggest the creature is more closely related to a chicken than to a lizard.

Although the study team cannot explain how the proteins they found on the ancient bone remained intact through the ages, they are relatively certain the protein fragments did not come from other, nondinosaur sources; all their contamination controls were clean.

An explanation for the proteins' presence could lie where the femur was found; the bone was buried 20 feet deep in sandstone along the side of a washedout ridge at Montana's Judith River Formation, one of the largest fossil sites in the United States. The scientists believe the sandstone may have softened any wearing on the bone during the millions of years of aging.

#### Feathered Friends

Once the fossils were extracted and cleaned of minerals, the North Carolina researchers analyzed them microscopically and found what appeared to be vestiges of bone cells, blood cells, and blood vessels within a fibrous structure that resembled collagen, a protein that makes up to 90 percent of the bone in many mammals. Further analyses with antibodies confirmed the presence of collagen as well as other proteins within the fibrous structures.

The samples were then sent to Asara, who usually uses mass spectrometry to

ferret out low levels of signaling proteins in cancer cells. He scanned the material and isolated the eight collagen fragments. The protein sequences were only 149 amino acids long—less than 10 percent that of a full-length collagen sequence—but were sufficient to allow the team to compare the fragments to collagen from 21 living species and to collagen found in the fossils of the *T. rex* and those of a 300,000-year-old mastodon.

The sequences from the *B. canadensis* fell within the group of archosaurs, an ancient group of land vertebrates whose members were more genetically akin to today's chickens and ostriches than to alligators and lizards. The *B. canadensis* and *T. rex* data provide the first molecular proof of the well-established theory that birds evolved from dinosaurs, says Asara.

Asara hopes the data alter paleontological thought on the resilience of proteinaceous material: "This should help convince the skeptics," he says. He hopes that as sequencing techniques become more precise, more details on dinosaurs and other extinct species will be extracted from larger pieces of collagen and other proteins. Such studies could usher in a new discipline that Asara and colleagues have dubbed fossilomics. •

Nuño Domínguez was an intern at Focus.

# **Course Change**

ORMONAL THERAPY FOR MEN with prostate cancer may increase their risk of death if they have coronary artery disease and have had congestive heart failure or a heart attack. This unsettling finding is reported by researchers at Brigham and Women's Hospital and the Dana-Farber Cancer Institute in the August 26 issue of *The Journal of the American Medical Association*.

Previous research shows that hormonal therapy, when used with radiation therapy to treat localized, unfavorable-risk prostate cancer, increases survival rates in men with no or minimal comorbidity but not in men with moderate to severe comorbidity.

"Until now, we were unsure which additional health risks might limit this well-established survival benefit," says lead author Akash Nanda, an HMS clinical fellow in radiation oncology at Brigham and Women's. So the scientists conducted a retrospective study of more than 5,000 men who had received either hormonal and radiation therapy or radiation therapy alone. They found the addition of hormonal therapy increased the mortality risk only in men with coronary artery disease-induced congestive heart failure or heart attack. But it did not appear to increase mortality risk in men who had only one risk factor for the disease, such as diabetes, high blood pressure, or high cholesterol.

"This study highlights the need," says senior author Anthony D'Amico, an HMS professor of radiation oncology at Brigham and Women's and Dana-Farber, "for a careful discussion of the potential risks and benefits of hormonal therapy with men whose coronary heart disease has caused a heart attack or heart failure."

# Receptive Audience

can a single Hormone, acting on a tiny region of the brain, normalize blood glucose levels and increase physical activity in diabetic and obese patients? It can in mice, says a team of researchers at HMS and Beth Israel Deaconess Medical Center.

Writing in the June 3 issue of *Cell Metabolism*, the team, led by Lihong Huo, a research fellow at the medical center, found that restoring leptin receptors to a particular group of neurons in the hypothalamuses of mice cured the animals' severe diabetes and doubled their activity levels.

"This discovery suggests a new therapeutic pathway for drugs to treat insulin-resistant diabetes in humans with severe obesity and possibly even to stimulate their urge to exercise," says senior author Christian Bjørbæk, an associate professor of medicine at HMS.

First identified in 1994 as an appetite- and weight-regulation hormone, leptin plays a role in energy homeostasis. Research has pinpointed the arcuate nucleus in the brain's hypothalamus as one key area in which leptin exerts an influence. Within this nucleus, scientists have identified two types of neurons that are responsive to leptin: the Agouti-related peptide neurons, which stimulate appetite, and the pro-opiomelanocortin, or POMC, neurons, which curb appetite.

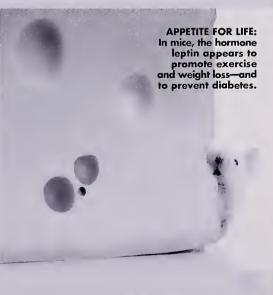
Other studies have indicated that leptin's action on the arcuate nucleus helps control blood-sugar levels as well as activity levels. In designing their study, Bjørbæk says, "We hypothesized that, in both cases, the POMC neurons were involved."

The scientists began their inquiry by measuring the appetite and body weight of mice whose neurons were genet-

ically deficient in receptors for leptin. These mice presented the characteristics associated with such a deficiency: extreme obesity, hypoactivity, and severe diabetes. The researchers used a technique that allowed them to genetically and selectively re-express leptin receptors in the POMC neurons. When leptin activity was restored only to those neurons, the mice became slightly less obese. More importantly, they became twice as physically active, and their blood glucose levels decreased to normal. So although replenishing leptin activity in the POMC neurons did not cure obesity, it did spur the mice to exercise more and it effectively halted the diabetes.

"The fact that normal glucose levels were restored independent of food or weight changes suggests that it is possible to normalize blood glucose even without weight loss," says Bjørbæk. These findings may offer potential targets for future drugs that alleviate diabetes or increase the will to exercise in obese and diabetic patients.

Jue Wang, a former intern for Focus, contributed to this article.



HOTO: ERIC ISSELEE/ISTOCKPHOTO.

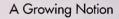
# Matters of the Heart

HE HEARTS OF THOSE WITHIN THE community of cardiovascular scientists and clinicians may have skipped a beat when news of the discovery came their way. HMS researchers announced they had found the mother of all heart cells known as the master human heart stem cell, a cell that can differentiate to form all parts of the heart, including contracting and smooth muscles and blood vessels. And this discovery was coupled with another; Harvard Stem Cell Institute researchers at Massachusetts General Hospital also found these vital progenitor cells resided

in regions of the heart known to be hot spots for congenital heart disease.

The research team was led by Kenneth Chien, director of the institute's cardiovascular disease program and the hospital's cardiovascular research center. Its discoveries, published in the July 2 issue of Nature, provide scientists with a vital cell standard for use in their investigations of human heart development and the genetic diseases of the cardiovascular system, particularly those known to cause heart disease in children. Identifying and manipulating the pathways along which these progenitor cells grow and differentiate could allow researchers to significantly influence congenital heart disease by converting severe forms of the disease to those with a better prognosis or even by preventing the disease in fetal and newborn hearts.

The researchers do not, however, see these cells as playing a role in the regeneration of the fully developed adult heart. For one thing, such cells are extremely rare in the adult heart. And the cause of morbidity in adults with heart disease differs from that for children; adults most often suffer from impaired function rather than structural abnormalities.



For their study, the team focused on determining how the human heart develops. At birth, the human heart is more than a thousand times larger than the adult mouse heart, yet embryonic human hearts differ little in size from those of mouse embryos. How, the researchers wondered, does the human heart achieve that level of growth?

The team found two possible answers to that question. The first was straightforward: Structural change drives the growth—that is, valves, muscles, and all other parts of the heart develop from their various independent cell lineages. Then the cells in those structures replicate and the heart's size increases.

But the researchers speculated that the reason might rest elsewhere, in what Chien describes as a stem-cell paradigm. In this line of thought, a single form of progenitor cell replicates, massively expands the pool of heart-cell precursors, and then differentiates into the various cardiac structures.

The researchers chose to investigate 3 this paradigm by genetically tagging progenitor cells derived from a human embryonic stem-cell line and then tracking their dispersal in heart tissue. When they analyzed the developing tissue, they were astonished to discover that



# Research Digest

large numbers of the progenitor cells persisted and were dispersed throughout the heart tissue. The highest concentration of the cells was in the aortic outflow track, a spot associated with congenital heart disease. The team also observed a large number of the distinctive intermediate cell types that give rise to all parts of the heart. These findings indicate the stem cells were capable of replicating and expanding their numbers before they differentiated in any specialized cell type in the heart.

Since the findings show that heart expansion relies on a stem-cell-mediated process, particularly in regions affected by congenital heart disease, the researchers consider the progenitor cells to be implicated in the underdevelopment or incorrect development of heart structures.

# Core Group

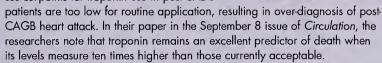
The team is currently studying three types of disease that affect children: Duchenne muscular dystrophy; specific chromosomal disorders, such as DiGeorge and Down syndromes; and rare, genetically based congenital heart diseases. For each disease type, Chien says, mouse models are not enough: "They are not likely to fully recapitulate the human disease."

For Chien and his colleagues, this study also underscores the importance of human embryonic stem cells to the research enterprise, rather than relying on induced pluripotent stem cell lines that are created in the lab by forced gene expression.

"Induced pluripotent stem cells are going to be good for research into certain diseases, but I'm not sure they will be good for research on heart diseases," says Chien. "The degree of variation in the induced lines is significant, so how do you even compare this cell to itself? But by targeting specific genes and manipulating them in human embryonic stem cells, you can create human models of human disease directly in a simplified format: human embryonic stem cells."

#### WAYFINDER ALERT

When determining the risk for heart attack in patients who have had coronary-artery bypass grafting, it may be wise to look beyond present standards, say researchers at Massachusetts General Hospital. Physicians often check levels of the biomarker cardiac troponin to determine the likelihood of an attack in such patients. But scientists led by James Januzzi, director of MGH's Cardiac Intensive Care Unit, report that consensus cut-points for troponin use in post-CABG



#### IN THE ZONE

Travel that chases the sun across time zones is exciting, even invigorating—until jet lag hits. But an anti-lag aid may be on the way. In the June 19 issue of *PLoS Computational Biology*, researchers at Brigham and Women's Hospital and the University of Michigan report the development of software that uses various measures such as light levels and sleep schedules to calculate the countermeasures needed to reset the body's inner clock. Team leaders Elizabeth Klerman '86, an HMS associate professor of medicine at Brigham and Women's Hospital, and Dennis Dean, a computational research associate in the hospital's Division of Sleep Medicine, believe their math-enhanced intervention could halve the numbers of days a traveler would need to adjust to a new time zone.

#### PROVISIONAL RESOURCES

Nascent cancer cells seem to need community to thrive. If isolated during the early stages of tumor formation, such cells kill themselves, an action called apoptosis. Scientists had thought apoptosis was the sole way these homeless cells perished. But researchers working with Joan Brugge, the Louise Foote Pfeiffer Professor of Cell Biology at HMS, discovered another cause: starvation. In the September 3 issue of *Nature*, the scientists report discovering that cells that had been genetically altered to become precancerous lost their ability to transport glucose, their primary energy source. When treated with antioxidants, however, the cells survived, opting to use fatty acids for their energy needs. By better defining the metabolism of precancerous cells, the research provides a fresh approach to new tumor-killing drugs.

#### TRAIL MARKER

Diagnosing acute appendicitis in children can be a bit like finding a particular tree in a forest: its symptoms resemble those of other conditions, and few diagnostic markers are specific to the disease. A study by researchers at Children's Hospital Boston, reported in the June 25 online issue of the *Annals of Emergency Medicine*, has identified one such biomarker: leucine-rich alpha-2-glycoprotein. The team was led by Richard Bachur, chief of emergency medicine at the hospital.





# The cadaver lying before them came with its own

set of instructions. "Let the body be injected with arsenic after death, *soon*," John Collins Warren, the first dean of Harvard Medical School, had written. The body, Warren continued, should be examined or dissected as appropriate, with the "morbid parts" carefully preserved and particular attention paid "to the heart, spleen, and prostate gland."

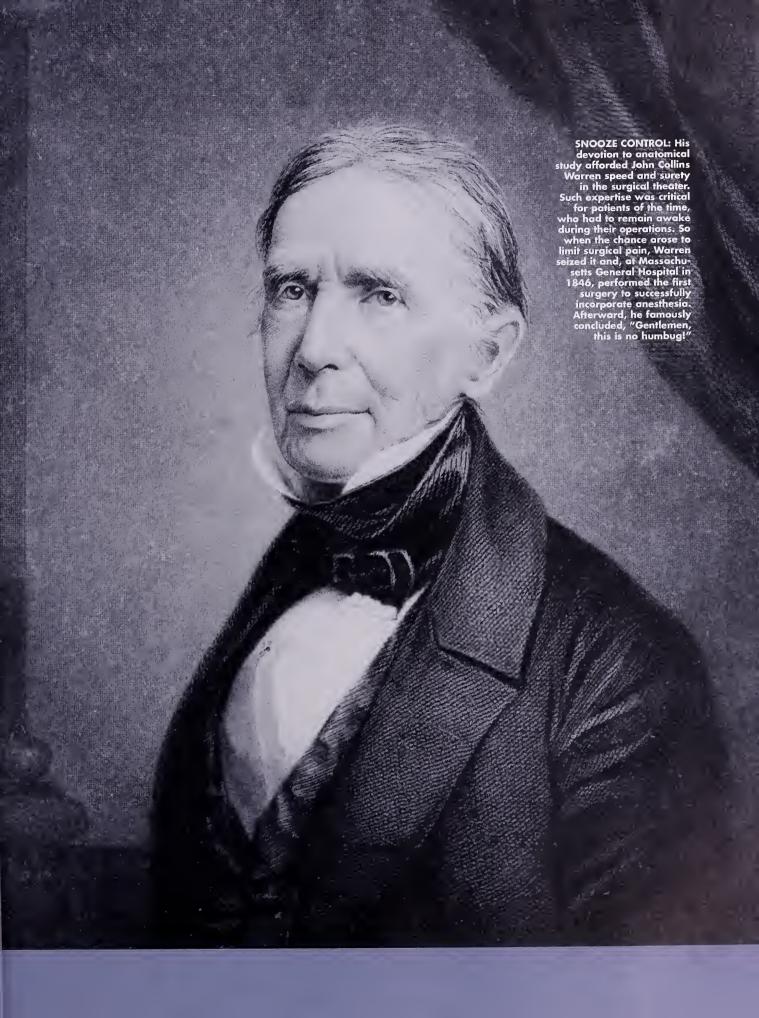
Over the course of his long surgical career, Warren took the same detailed care in assembling an extraordinary collection of anatomical and pathological specimens, which he presented to Harvard in 1847, along with a gift of \$5,000

to create the Warren Anatomical Museum. But no donation was more remarkable than the one he bequeathed nine years later: his own body as specimen.

His bones, Warren had written in the same set of instructions, should be "carefully preserved, whitened, articulated, and placed in the lecture-room of the Medical College, near my bust; affording, as I hope, a lesson useful, at the same time, to morality and science."

Four days after Warren's death, J. B. S. Jackson—the School's first professor of pathological anatomy, the Warren Museum's first curator, and a member of the Class of 1829—followed those instructions for preparing Warren's corporeal bequest. When the family later restricted the viewing of Warren's remains to his descendants, his bones were placed in storage.

And so John Collins Warren became a literal skeleton in a Harvard Medical School closet, thwarted in his intention of embodying the anatomists' motto of *mortui vivos docent*: the dead teach the living.





To acquire the human cadavers needed for their dissections, early doctors hoped for the executed but depended on the resurrected.

BY ANN MARIE MENTING

# midmight

The group operated clandestinely. Even its name remained unwritten. Correspondence from one member to another would merely contain discreet references to the Sp——rs Club. Nothing else needed to be stated. But the group of young men undoubtedly had a home, a safe haven for the implements so necessary to its gatherings. Perhaps it was simply a room that boasted a table, long but likely lean, as its furnishing. Around this fixture, the club members would gather, intent as one of their number separated skin from fascia, muscle from bone, and organ from cavity. Small animals, even the occasional larger creature, were sacrificed, opened, and studied by the group.

**Students of medicine** often took it upon themselves to procure a candidate for dissection either by hijacking a body between deathbed and grave or by extracting one from its earthy resting place.

Had the club members restricted their explorations to four-legged species these activities would not, in themselves, have necessitated such discretion. But it was their other endeavor—the anatomical study of the human body—that demanded their secrecy. During this nation's formative years, the practice of human dissection struck equal measures of fear, loathing, and curiosity in the hearts of nearly every man and woman. And these attitudes were compounded by the knowledge that the fathers, daughters, grandmothers, and uncles whose bodies graced those cutting boards were most likely resurrected during midnight raids on local graveyards. This fact made the actions of these young men-these young Harvard medical men-daring, dangerous, and possibly, even demonic.

#### Like Father, Like Son

The group of young anatomists, known without elision as the Spunkers Club, is one such story. Founded in the late 1760s by a group of Harvard students, the club featured several future luminaries, including John Warren, who would be a founder of today's Harvard Medical School, and William Eustis, a future governor of Massachusetts, U.S. Congressional representative, and secretary of war for President James Madison. They and their comrades studied general medicine, surgery, and anatomy in the home of John's brother, Joseph, a noted physician, teacher, and Revolutionary War hero. It is speculated that Joseph, abetted by John, was the club's instigator.

The club was a response to the times: In the late eighteenth and early nineteenth centuries, a knowledge of human anatomy and skills in the surgical dissection of the human body were increasingly considered critical to the education of young men who wished to practice medicine. Coupled with this demand was the burgeoning number of medical colleges in the colonies.

Yet crucial components to such an education—human cadavers—were nearly nonexistent. Reasonable legal mechanisms for procuring a steady supply of bodies wouldn't appear until the late 1800s. So any physician, teacher, or student who sought to learn the internal byways of the human body was forced to be inventive. The more daring of students often took it upon themselves to procure a candidate for dissection either by hijacking a body between deathbed and grave or by extracting one from its earthy resting place. This exercise was not unknown to young John Collins Warren, a future founder of Massachusetts General Hospital. He reported that in 1796, while a student at Harvard College, he "began the business of getting subjects" for anatomical study. And quite the business it was, to read one of his accounts.

"We reached the spot at ten o'clock at night ... [and] proceeded rapidly, uncovering the coffin by breaking it open. We took out the body of a stout young man, put it in a bag, and carried it to the burying-group wall." The theft was not to be that simple, though, for at the wall, the troop found a man walking along, smoking. The lads were forced to improvise.

"One of the company . . . affected to be intoxicated, while he contrived to get into a quarrel with the stranger," Warren recalled. "After he succeeded in doing this, another of the party, approaching, pretended to side with the stranger, and ordered the other to go about his business. Taking the stranger by the arm, he led him off in a different direction. . . ." The body was whisked off



SNATCHIN' STIFFS: Eighteenth-century caricaturists were not coy about mocking the doctors who participated in grave robbing, as in this etching of a fleeing William Hunter, the physician who introduced the use of cadavers to medical education in Great Britain.



he apposition that calonial America held for the proctice of dissectian made it fertile ground for the bady trade and the skills of the grove robber. Yet even in notions where dissection was accepted, the notion of cutting inta a human body hos rorely been token lightly. Far ages, in foct, it corried the possibility af divine disappravol.

Early Egyptians believed the gods were displeased if a carpse was cut, even if the cutting was in preparation for embalming, burial, and the next life. Ta sidestep gadly wroth, the oncient undertakers would press on elderly mon into service. Armed with a sharp stane, the scapegaat would quickly slash into the obdamen of the corpse, then flee. The undertokers would further emphosize their noncompliance—and ensure the gads had the right man shauld they wish ta exoct revenge-by pelting the scurrying fellow with rocks. Greeks, too, ovoided opening their venerated dead, but felt no compunction aver peering into the badies of those they canquered.

Comporative anotomy provided many learned populations with the appartunity ta goin knawledge of the mechanisms that sustained life ond movement. The Romons were octive os camparative anatamists; Galen, the second-century Romon physicion and philosopher, opporently used opes as dissection madels. Medieval Arabs, obiding by a dactrine that held humon dissection as unclean, also investigated onotomy through the dissection of pigs and other onimals.

Although early Christians may have inherited the Ramans' repulsion toward dissection, indications are that attitudes changed; the



deoth in 1410 of Pope Alexander V was followed by an autopsy. And despite a papal bull denauncing a gruesame practice of the Crusoders—who dismembered, boiled, and mocerated the flesh of fallen comrodes so as to more efficiently package their remains for shipment hame—there are few prahibitians an autapsy ond dissection in Cotholic or Pratestont writings. In foct, in regions in which the Cotholic Church troditionally held sway, dissection was legalized during the Middle Ages: Fram the end of the thirteenth century through the middle of the fourteenth, the countries now known as Spain, Germony, and Italy each had lows that legalized the science.

This wave af legalization helped lift much af the stigmo ossocioted with the dissection of humans while also boosting the saurces far badies and body parts that cauld be used by thase seeking ta advance medical knowledge. Ultimotely, this internotional change of opinian oltered U.S. lows governing onotomy, leading ta an expansian af ocodemic instruction and research in the discipline and a shuttering af the activities af thase who specialized in resurrecting the dead.

to Cambridge while the young Warren stayed behind, working until dawn to refill the grave and gather the tools. At the day's first class, he faced his teacher, John Warren, the School's first professor of anatomy and surgery, former Spunker—and his father.

"When my father came in the morning to lecture," the younger Warren wrote, "and found that I had been engaged in this scrape, he was very much alarmed; but when the body was uncovered, and he saw what a fine, healthy subject it was, he seemed to be

as much pleased as I ever saw him." The acorn, it seems, had not fallen far from the oak.

# The Company One Keeps

While it was often the responsibility of the students to provide the specimens they would dissect in class, it was more usual for the professor to shoulder the duty of ensuring an adequate supply of cadavers. For centuries in England and its North American colonies, the sole sanctioned source of bodies was criminals, especially those whose crimes were so heinous that the judge added further insult to the death sentence by ordering the body "anatomized."

In 1784, Massachusetts added duelists convicted of killing an opponent to the list of candidates for the dissection table, and by 1824 the Commonwealth had augmented that supply with the bodies of convicts who died while in prison.

The numbers remained woefully inadequate, however. Estimations of supply and demand in Vermont, for instance, THE THRILL OF THE GRILL:
To foil body snatchers, families sometimes erected iron grills around the grave of a loved one, as shown at right. And while resurrectionists avoided being seen with the bodies they snatched, later generations of medical students were proud of their anatomy work and often took group photos with their cadavers, such as the one Harvard medical students had taken in 1905 at far right.

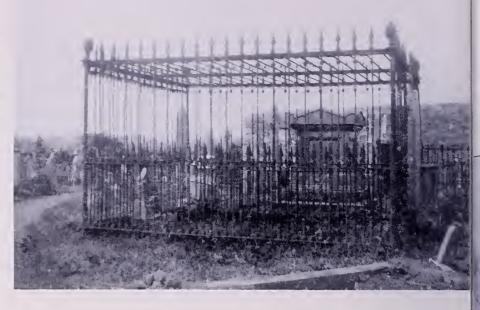
indicated that between 1820 and 1840, nearly 1,600 students attended medical schools in that state, and each student was expected to perform a dissection alone, with a preceptor, or as a member of a small group. Conservative tallies placed the number of bodies needed to serve Vermont's medical students at about 400. Yet records indicate a mere 40 corpses would have been available legally.

If one extrapolated Vermont's situation to the nation at that time, supply estimates grew to about 5,000 bodies, again far exceeding the number legally obtainable. Preceptors and physicians were forced to think along lines that usually placed them in league with grisly vendors known variously as resurrectionists, sack 'em up men, exhumators, body snatchers, or grave robbers.

#### Stock in Trade

Although this form of commerce was not an above-board sort of business, there is a rich record of diaries, epistles, and newspaper accounts of grave robbers' exploits. These documents reveal the risky and lucrative nature of the business. An 1820 bill to the London surgeon and anatomist Sir Astley Cooper, who kept more than a few resurrectionists busy, parsed one delivery into such costs as transport and the hiring of carriage and coachmen for a total of 13 pounds, 12 shillings. In 2008, in the United States, that sum would have translated to roughly \$1,300. Such pricing was not exclusive to England's commerce; one early-nineteenth-century Ohio-based exhumator charged medical schools \$30 per corpse, or approximately \$409 in 2008 dollars. His business was said to have been brisk.

The trade was also seasonal. Medical colleges held sessions from early September through May. This calendar had olfactory benefits as it avoided the steamy months of June, July, and August when



bodies, in this time before embalming, could become quite ripe quite quickly.

Methods for raising and transporting the corpses were as varied as the personalities and talents of the robbers who employed them. For the standard grave robbery, however, a party of three was considered effective-two to dig the body out and one to drive the getaway wagon. Since resurrections were best undertaken at night, daytime reconnaissance was vital, not only to triangulate the grave against easy-to-locate landmarks but also to observe and map any traps the family may have set to thwart the very act the robbers were planning. Some deterrents were simple telltales cleverly strewn flowers, perhaps, or a patterning of stones or shells-others, such as tripwires attached to loaded, cocked guns, were dangerous and direct.

For the task, the minimum equipment was a shaded lantern, tarpaulins, an auger for preparing the coffin lid to be pried open, and one or two wooden spades—wood did not ring out as metal would when it hit a rock or other hard surface.

In addition to these tools, the digging duo often had one of two items specially crafted for pulling the body from its crypt. One, a simple harness, could be slipped under the arms of the deceased; an attached rope allowed the robbers to tug the body free. Another device—the hook—may indeed have had its genesis among butchers. This tool, forged from a long iron bar, had one end curled to form a short, blunt hook. By snagging the hook under the corpse's chin, the diggers could pull the body up and out.

Time from start to finish? Most sack 'em uppers bragged one hour flat.

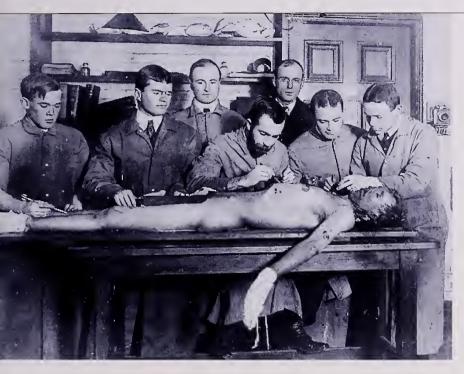
#### Amateur Hour

Sometimes anatomists and physicians of the do-it-yourself stripe would attempt to resurrect bodies for their own use. Such endeavors could be perilous, as Thomas Sewall, Class of 1812, learned. Sewall lived in Chebacco, a section of Ipswich, Massachusetts. There he married and set up practice. And it was there, in the fall of 1819, that Sewall was found guilty of possession of disinterred bodies.

The events that led to this outcome began on a wintry night a year earlier when residents near the town's graveyard noticed glimmers of light coming from its grounds. Worries were kindled and within days townspeople were in the graveyard with picks and shovels. One family found a distinctive hair clip next to the recent grave of their daughter-yet her body, and the hair once moored by the clip, no longer lay in the grave. Others excavated the graves of their departed. A total of eight graves, some dating back to 1811, were found to be unoccupied. Suspicion quickly centered on Sewall-he was known to teach dissection to students in his home—and when identifiable parts of three different bodies were found on his premises, he was indicted for what newspapers of the time called a "most daring and sacrilegious robbery."

In November, Sewall, and his attorney, Daniel Webster, were handed the

**Some deterrents** were simple telltales—cleverly strewn flowers or a patterning of stones—others, such as tripwires attached to loaded, cocked guns, were dangerous and direct.



guilty verdict. Sewall was fined \$800, possibly the largest fee assessed for possession of an unsanctioned corpse-a body other than that of a criminal's—in the country. No longer comfortable as a member of the Chebacco community, Sewall accepted Webster's invitation to move to Washington, DC. There, Sewall was professionally reborn, helping to found and lead the Medical Department of The Columbian College, which is today the medical school for George Washington University.

# By the Book

The Sewall affair highlights some of the confounding legal aspects of grave robbing. By and large, the taking of bodies from graves was not illegal—a dead body was not considered property in English, and therefore in early colonial, law. Yet the clothing and ornaments buried with the dead were protected; their theft was actionable. To honor this fine line, most grave robbers stripped the bodies they appropriated of all physical goods; their only worry then became the ire of townsfolk who might catch them at their labors.

Physicians and medical schools were not exempt from the public's anger, for the anatomists' patronage of the body snatchers fueled an industry that preyed upon their departed neighbors, friends, and families.

In Massachusetts, an effort to clear the legal ambiguity over the procurement of bodies began in earnest in 1815 when the Commonwealth passed a law—the one that led to Sewall's disgrace and fine-making it a felony to disturb a grave or to receive a body obtained in such a fashion. Punishments included a one-year imprisonment or a fine of up to \$1,000. Within two decades, the issue driving the trade—the meager supply of bodies for study—was taken up by Abel Lawrence Peirson, Class of 1816, a member of the Massachusetts Medical Society.

Like many of his colleagues, Peirson, a Salem surgeon, was mortified by surgery's association with the graverobbing industry. In February 1829, he formed a committee to petition the legislature to "modify the existing laws which operate to forbid the procuring of subjects for anatomical dissection." By January 1830, a bill had been introduced, but it went nowhere. So Peirson's committee began the nineteenth-century version of a media campaign—complete with pamphlets, op-ed pieces, and public debates-that aimed to educate the public on the proposal's merits.

Their tactics worked. In early February 1831, the legislature requested that a member of the society address the proposal at a joint session; John Collins Warren, who since his grave-robbing days had become a widely respected surgeon—and the first dean of Harvard Medical School—was tapped to tackle the task. By the end of that month, an act protecting the "sepulchres of the dead" and legalizing the study of anatomy, the first to do so in the United States, had been passed. The rule permitted civil officials to surrender any corpse that would have otherwise been slated for burial at public expense, thereby increasing the supply of bodies for study and undermining the resurrectionist trade.

The law also helped sever the link between dissection and crime that existed in the public mind. Gone was the centuries-old judicial fiat for treating dissection and anatomical study as insults to be added to the execution sentences of those guilty of such major crimes as murder. And for families that for generations had associated the actions of anatomists with the theft and desecration of their loved ones, gone was their need to pattern the ground above their departed.

Ann Marie Menting is associate editor of the Harvard Medical Alumni Bulletin.

Harvard, Houdini, and high society tangled with a surgeon's wife, who nearly fooled them all.

BY JESSICA CERRETANI

It began, for Mina, as a lark. She sat with her husband and their guests in the dark spring night, holding hands around the table. The air was thick with quiet anticipation, and she giggled nervously. Then, suddenly, the table began to tilt. ~ The séance had been the brainchild of Mina's husband, Le Roi Goddard Crandon, Class of 1898. Earlier that week, in May 1923, the surgeon had read an account of a paranormal occurrence called table tipping, and he wanted to see whether he could replicate it. He built a table exactly to the specifications in the book and invited friends to a party at the couple's Beacon Hill townhouse. ~ Now, against all logic, the table was rocking back and forth. In an

GIVING UP THE GHOST: Mina and Le Roi Crandon conjure the face of a spirit above their heads in this publicity photo.

# SLUNIST



effort to determine who might be the medium through which the spirits were working, each person left the table; finally, only Mina remained. The table continued to move until she left. The doctor's wife, it seemed, had hidden talents.

Until that evening, Crandon had been the more renowned of the couple, having earned the moniker Button Hole Crandon for his innovation of an appendectomy technique performed through a patient's navel. It may have been this procedure, in fact, that brought Crandon and Mina together: The HMS surgery instructor had allegedly met his new trophy wife—number three, for those keeping count—at a Boston hospital when he treated her for appendicitis.

Not long after that encounter, Mina divorced her first husband, a grocer, and promptly married the good doctor. She had, no doubt, traded up: A Boston Brahmin who could trace his lineage to one of the original Mayflower passengers, Crandon was educated and wealthy. But he was also nearly twenty years her senior, described as arrogant and antisocial. An unfortunate scandal, which stemmed from his misdiagnosis of appendicitis in a patient, had reportedly almost cost him his job. His resulting midlife crisis—during which he married Mina and bought a yacht—combined with his obsession with death, had spurred his new interest in Spiritualism.

The movement, based on the belief that mediums can communicate with the dead, had flourished during the nineteenth century but was still attracting followers in the 1920s. Sir

Arthur Conan Doyle was the most visible proponent of Spiritualism at the time. "I consider the psychic question," the creator of Sherlock Holmes declared, "to be infinitely the most important in the world."

With this in mind, Crandon began a correspondence with Doyle, detailing Mina's apparent powers. Since that first evening, the couple had held regular séances at their home at 10 Lime Street in Boston, and with each one, Mina's abilities seemed to grow stronger: Whatever new phenomena Crandon happened to read about—abrupt flashes of light, ghostly music, the appearance of a live pigeon—his wife was now able to conjure. Her mystical prowess reached new heights one evening, when she channeled the spirit of Walter, her long-dead brother.

Intrigued, Doyle invited the pair to his London home, where Mina so impressed the writer that he deemed her "a very powerful medium" whose psychic gifts were "beyond all question." Before long, Mina had caught the attention of the editor of *Scientific American*, J. Malcolm Bird, who extolled her powers in a series of articles for the magazine, concealing her identity with the pseudonym Margery. A year earlier, *Scientific American* had offered a \$2,500 prize to any medium who was proved legitimate. Mina seemed a perfect candidate. It didn't hurt that her husband was a prominent Harvard surgeon. Surely a man of science and medicine—presumably interests that tend toward a natural skepticism—would only seek and promote the truth.

SHE OFTEN CONDUCTED her séances clad only in a negligee and silk stockings, but not before her husband had proudly displayed photographs of her communicating—in varying stages of undress—with the Great Beyond.

# Tempting Fate

At first glance, Mina Crandon hardly seemed to fit the stereotype of a medium. The daughter of a Canadian farmer, she had moved to Boston to live with her older brother, Walter, until he was killed in a locomotive accident. Described as "too attractive for her own good," Mina had worked as a secretary, an actress, and even an ambulance driver before marrying Crandon. She often conducted her séances clad only in a negligee and silk stockings, but not before her husband had

piqued the interest of their guests by displaying photographs of her communicating—in varying stages of undress—with the Great Beyond.

Perhaps it was this very atmosphere that initially convinced Scientific American's prize committee of her talents. In fact, the group which included Bird; William McDougall of Harvard University; Daniel Comstock of MIT; Walter Franklin Prince of the Society for Psychical Research; and Hereward Carrington, a psychic researcher found the Crandons so welcoming that several members took up residence at 10 Lime Street, living and dining with the couple even as they investigated Mina's veracity.

This relationship was particularly dubious in light of the fact that Carrington had borrowed money from the couple. The editor's objectivity may also have been blurred: "Mr. Bird, if he wishes to achieve the authority in psychical research which I invoke for him," advised Prince, "must hereafter avoid falling in love with the medium."

The committee was poised to present Mina with the prize when Harry Houdini heard the news. The magician—who had begun debunking mediums as a side project—was a member of the committee but was unaware of the group's investigation. Peeved, he fired off a letter to Bird, demanding to be included. Houdini, already skeptical of Mina's abilities, called Bird's articles about her "the worst piffle I ever read." When pushed by Houdini to judge the medium's authenticity, Bird responded, "Why, yes, she is genuine. She does resort to trickery at times, but I believe she is fifty or sixty percent genuine." A month

later, in July 1924, Houdini, accompanied by O. D. Munn, the magazine's owner, arrived in Boston to decide for himself.

# The Burden of Proof

That night, Houdini and Munn gathered at Lime Street with other members of the committee to witness Mina's abilities. The lights were dimmed and the sitters clasped hands and touched their feet together, a method of control that presumably kept the medium from manipulating the table or other objects herself.

> Soon, the show began. As had occurred at prior séances, the spirit, "Walter," rang a bell attached to a box on the floor. Then he knocked over Mina's cabinet, the three-sided wooden screen that surrounded her. Finally. he announced he was holding a megaphone that had been sitting at Mina's feet. At Houdini's request, Walter threw it to him. The other sitters were impressed. Not so Houdini. Mina's performance was, he wrote, "the slickest ruse I have ever detected."

> He explained the trickery to his colleagues and, later, to the public in a pamphlet entitled "Margery" the Medium Exposed. The day of the séance, he had worn a rubber bandage around his calf, which allegedly rendered his leg painfully tender, allowing him more sensitivity in the limb. This, he claimed, made it easier for him to detect the movements of Mina's own foot when it was pressed against his during control: "I could distinctly feel her ankle slowly and spasmodically sliding as it pressed against mine while she gained space to raise her foot off the floor and

touch the top of the box" to ring the bell, he said. Houdini also had explanations for the crashing cabinet and megaphone. Bird had briefly broken control with Mina and left the room, during which time she was able to topple the cabinet with her foot and pick up the megaphone with her free hand. She placed the megaphone on her head like a dunce cap, then jerked forward, tossing it at Houdini's feet.

Despite Houdini's claims, the committee continued to investigate the Crandons. The result was all-out war: Houdini strived to expose Mina as a fraud, while the medium sought



TRICK OR TREAT: Mina Crandon claimed to be able to communicate with the dead.

# **YOU WANT TO KNOW WHAT** it feels like to be a witch? That's what they would have called me in Boston 150 years ago...now they send committees of professors from Harvard to study me. That represents progress, doesn't it?"

to make him look foolish. In his quest to prove the hoax, Houdini built a large wooden box to constrain Mina, with holes for only her head and hands to remain free. The overthe-top "Margery Box" didn't help either party's case. Mina entered it, but complained that the wood blocked her communication with the spirits. Then Walter piped up, accusing the magician of planting a ruler in the box to make it look like Mina had secreted it there to help her move objects. (Houdini had previously accused Mina of holding a stick in her mouth to manipulate objects while her hands and feet were controlled.) Houdini denied planting the ruler—in fact, he charged the Crandons with placing it in the box to make him look bad—but the damage was done. As for Walter, the irritable spirit was incensed by the suspicions of his sister. "Houdini, you goddamned son of a bitch!" he bellowed. "Get the hell out of here and never come back."

Houdini did return for one last séance that August. Compared to earlier sittings, it was uneventful, save for one exchange between the magician and the medium. Houdini had shared with the Crandons his plans to denounce Mina as a hoax at a Boston theater; he had recently added reenactments of tricks used by various defrauded mediums to his traveling stage show. If he misrepresented her, she warned, her friends would give him a good beating.

# Blithe Spirit

All threats aside, what happened next was rather anticlimactic—at least at first. *Scientific American* refused to grant Mina the prize, a disappointment that likely hurt her ego more than her purse; the Crandons had planned to donate the money to Spiritualist causes. Bird resigned from the magazine and began promoting the Crandons. Houdini continued with his stage shows. In January 1925, Doyle published an article in the *Boston Herald* criticizing Houdini and defending Mina, whom he termed "a most charming and cultivated lady."

For her part, Mina went on with her séances, adding new elements—including ectoplasm, a phosphorescent material that seemed to pour from her orifices during spirit communication—to the mix. It was this ectoplasm that attracted the attention of other psychic experts. The English researcher Eric Dingwall attended a séance with Mina during which the ectoplasm appeared. At first an excited believer, Dingwall soon turned skeptic: The Crandons never allowed the ectoplasm to be viewed in full light, it didn't move unless Mina threw it, and, upon further study, it "strongly resembled the cartilaginous rings found in the mammalian trachea"—a substance that Crandon could easily obtain in his work as a surgeon.

Later that spring, a group of faculty members from Harvard—including HMS pathology professor S. Burt Wolbach, Class of 1903—visited Lime Street to observe the medium in action. The group took part in six séances and at the time mentioned no apparent trickery. Yet they revealed their true findings in an article published in the November 1925 issue of *The Atlantic*, including the observation that Mina had at one point freed both her hands from control and removed objects from "the region of her lap." Still, they noted, an "internal search of the medium has never been permitted."

The faculty members' final conclusion was that "trickery accounted for all the phenomena" they had witnessed. That finding, though, was of little concern to Mina. "You want to know what it feels like to be a witch?" she asked. "You know that's what they would have called me in Boston 150 years ago... now they send committees of professors from Harvard to study me. That represents progress, doesn't it?"

# Dead Reckoning

In the midst of these investigations, a curious thing happened: Houdini died. The athletic magician had been punched repeatedly in the stomach by a college student whom he had dared to test his abdominal muscles. A few days later, on Halloween 1926, Houdini died at the age of 52. The cause of death was a ruptured appendix.

The death came as a shock—to almost everyone. Two years earlier, Houdini's friend-turned-nemesis Doyle had predicted that he would "get his just desserts very exactly meted out," while Walter himself had announced at a recent séance that the magician would be dead within the year. Houdini, Crandon later concluded, "had been dealt with by the spirits for activities against the movement."

Threats are one thing, forensic proof is quite another, particularly when a man's death certificate notes the location of his appendix as his left, not right, side. In 2007, an effort—since aborted—began to exhume Houdini, sparked by theories that he had been poisoned. The chief suspects? The Crandons.

# The Myth of Fingerprints

He may have died, but Houdini's suspicions about the Crandons lived on. Subsequent investigations came to similar conclusions as those of the *Scientific American* and Harvard groups, including a report by Joseph Banks Rhine, who would later found Duke University's Parapsychology Lab. Rhine was convinced Mina was a fraud, suggesting that "it is evidently of very great advantage to a medium, especially if fraudulent, to be personally attractive; it aids in the 'fly-catching busi-



**GHOST IN THE MACHINE:** Houdini's "Margery Box meant to prevent the medium from moving during séances, only served to fuel the controversy surrounding the Crandons.

mold of the print and used it to create her dead brother's supposed prints. Later investigation of Fife revealed that no one in the police department had ever heard of him. This time, the evidence of fraud was clear.

# Unhappy Medium

Mina's downfall was as sudden as her meteoric rise had been. Although she continued her séances for some time after the fingerprint fiasco, when her husband died in 1939 she became depressed and alcoholic. She even attempted to jump off the roof of her house. Her distress, perhaps, was rooted in the fact that she'd lost her best audience: Crandon himself. "'Margery' might take a chance and confess if Crandon did not firmly believe," W. S. Griscom, a Boston Herald reporter and mutual acquaintance of the Crandons and Houdini, once wrote to the magician. "She knows it would end all their relations and she doesn't dare do it."

While Crandon's interactions with Fife suggest he was complicit in the scheme, Griscom wasn't the only one who was convinced the surgeon wanted to believe in his wife; the Harvard investigators and other researchers posed similar theories. The couple, they suspected, had engaged in a sort of folie à deux that benefited them both in very different ways: The séances distracted Crandon from his preoccupation with his own death, played to his sense of discovery, and bolstered his ego. And they made Mina a star, transporting her from mere hausfrau to Spiritualist celebrity—and likely kept her husband's eye from wandering to potential trophy wife number four.

That star had faded by her final days: one visitor described her as a "dumpy little woman," hardly the negligee-clad beauty of decades earlier. Yet Mina's air of mystique remained intact. On her deathbed in 1941, the medium was encouraged by yet another psychic researcher to finally confess and divulge the tricks she had used during the séances. After first suggesting that the questioner go to hell, she blithely added, "Why don't you guess? You'll all be

guessing—for the rest of your lives."

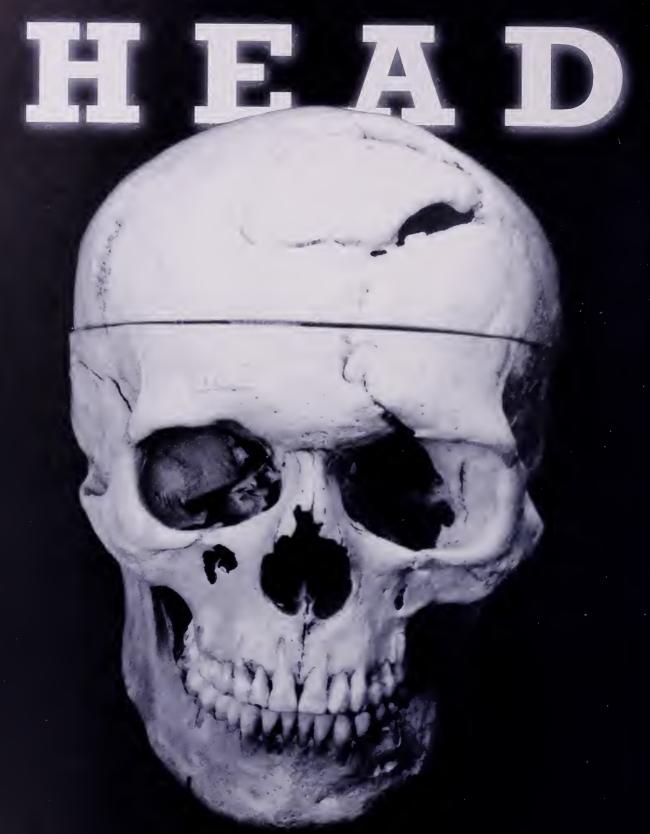
Jessica Cerretani is assistant editor of the Harvard Medical Alumni Bulletin.

ness.'" Doyle, still a staunch supporter of the Crandons, fired back by purchasing advertising space in the Boston papers, in which he simply stated, "I. B. Rhine is an Ass."

Mina paid no heed. By 1928, she had a new psychic talent to promote: Walter now claimed he could leave a fingerprint in wax to prove his presence. Indeed, following a séance, two prints appeared in a basin of dental wax in the room. Refusing to take the prints at face value, Crandon called on John Fife, an acquaintance he identified as the chief of police at the Charlestown Navy Yard and an expert on fingerprints. Fife confirmed that thumbprints found on the dead man's razor matched perfectly the prints in the wax.

Emboldened by the findings, Crandon enlisted another friend, E. E. Dudley, to catalog all prints left by Walter in future séances. Dudley obliged, but took it upon himself to collect prints from all the sitters at Mina's séances as well, to disprove critics' claims that the prints had been left by a living person.

There was just one problem: They had been. To his surprise, Dudley realized that "Walter's" prints were identical to those of one Frederick Caldwell-Mina's dentist and friend. The apparently unwitting man had given the medium an imprint of his thumb as an example when he showed her how to use the dental wax he provided. Mina, it appeared, had then made a



Phineas Gage wasn't the only nineteenth century worker with a blast to the brain—and a connection to Harvard Medical School. ~ BY WILLIAM IRA BENNETT

# CASES

#### **Every Harvard medical graduate knows the story:**

In 1848 Phineas Gage was tamping explosive powder into a rock in Vermont. The powder exploded prematurely and blasted an iron tamping rod out of Gage's hands and through his forehead. The railroad construction foreman famously survived this primitive lobotomy, with some possible deterioration of his personality, to become one of the great medical curiosities of his day.

Harvard Medical School's Warren Anatomical Museum, which was only a year old when the accident occurred, soon acquired a plaster cast of Gage's head. In 1867, seven years after his death, Gage's mother was prevailed upon to give her son's skull and the tamping rod to the physician who had treated him. The doctor donated the skull and the rod to the museum as teaching tools for medical students, creating the museum's most famous exhibit.

Yet for several days in 1868, M. Jewett, an Ohio physician, attempted to upstage the Phineas Gage exhibit. That year, somewhere near Akron, a coal miner named Noel Lenn suffered a similar accident. A gas pipe was driven through two thicknesses of his cap in front, his right forehead, the front part of his brain, then back out of his skull a bit forward of his left ear, and finally through a third thickness of cap. With great presence of mind, and considerable strength, Lenn's mate extracted the bent pipe and got the injured man home. In the ensuing days the doctors caring for Lenn removed a good deal of "coagulated blood and broken up brain" from the site of the wound—and incidentally purged him of a 17-foot-long tapeworm.

The miner, who had studied for the priesthood in his native France, survived, but his faculties were slow to recover. "He holds no conversation either in French or

English," Jewett wrote to Henry Jacob Bigelow, Class of 1841, a prominent surgeon and HMS professor who had studied Gage and other cases of brain trauma. "To my request that he go home with me and work in my garden he replied, 'No sir-ee,' the largest number of words I have heard him connect since the injury." Jewett facetiously added that Lenn "could not realize anything from the sale of any books."

Lenn was by then "physically as well as ever but very averse to labor." He was, therefore, something of a burden to the community where he was living. And this was what prompted Jewett to contact Bigelow. What is remarkable about the correspondence between the two is its very matter-of-factness.

"What think you," Jewett asked Bigelow, "of the idea of taking him to Boston for a permanent residence in a museum? Have you any Barnum?" Jewett proceeded to offer Lenn to Bigelow for study, proposing that the man be installed in the museum as a living exhibit, his meager needs to be supplied by revenue from the curious public and, perhaps, from physicians with a commitment to learning. The animate component of the exhibit would be accompanied by cap, gas pipe, and, as an added attraction, the preserved tapeworm. If the Harvard people weren't interested, Jewett cagily suggested, "per-

haps the faculty in Paris would be glad to take him in charge."

Bigelow hastened to reply that the economics of displaying Lenn in a museum were utterly unfavorable. If anyone could have made a living at it, Bigelow wrote, it would have been Gage, "a shrewd and intelligent man and quite disposed to do anything of that sort to turn an honest penny," who had "tried it for a short time at New York at Barnum's" but failed to support himself. "As for the Paris faculty collectively or singly," he added, "money appears to be the one thing in least abundance and in most demand among them."

Bigelow then made a counterproposal: If Jewett would bring Lenn to Boston, Bigelow would arrange for the man to be kept at an appropriate institution. Bigelow would attend to any financial obligations that might arise, in return for which he would have the exclusive right to study Lenn at his leisure. This arrangement was, of course, to be kept confidential. Jewett quickly assented, though he noted that Ohio had a law against bringing paupers into the state or taking them out. But in this case he thought there should be no difficulty.

In due course Jewett arrived with Lenn for a meeting of the medical society. The Warren Museum eventually acquired exhibits 952 (a cast of Lenn's head) and 3107 (the gas pipe). Lenn himself was deposited in the Taunton Lunatic Hospital for several years, then transferred to the Tewksbury State Almshouse, from which he absconded in 1874 with his skull still inside his head. He was not heard from again. •

William Ira Bennett '68, a psychiatrist in private practice in Cambridge, Massachusetts, served as editor-in-chief of the Harvard Medical Alumni Bulletin from 1995 until earlier this year. This account was excerpted, adapted, and reprinted with permission from an article Bennett published in the July–August 1987 issue of Harvard Magazine.

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# hool for

Corpses plucked from graves, murder conducted by mail, chivalry gone awry—what 227-year-old institution doesn't have a few skeletons clattering in its closets? Test your wits on these shocking stories from Harvard Medical School's history.

BY PAULA BYRON



#### **Murder Most Foul**

George Parkman's prominent chin had always given Webster him an air of determination. But as the gaunt, nearly skeletal physician climbed the steps of Harvard's medical college on the morning of November 23, 1849, the thrust of his jaw was more pronounced than usual: He was hellbent on collecting a long-standing debt from Professor John White Webster. Sadly, Parkman failed in his mission. He also failed to leave the building alive.

For weeks Boston's citizens scoured the neighborhood for signs of the missing doctor. Finally, at the prompting of a suspicious janitor, authorities recovered Parkman's remains from Webster's chemistry laboratory. Upon his arrest, Webster, a member of the Class of 1815, swallowed a strychnine pill. He went on to survive his suicide attempt only to endure, in March 1850, one of the more sensational murder trials of the nineteenth century. His fellow professors provided the forensic evidence needed to convict him.

In the weeks before his death by hanging, Webster confessed, at the urging of a local minister, to having fatally struck Parkman during a heat-

ed quarrel over the debt. After that, Webster stated, "All I could see was the need to conceal Dr. Parkman's body in order to avoid the blackest disgrace."

- Parkman's body found?
  - A. The hole beneath Webster's privy
  - B. A large wooden tea chest
  - C. The furnace
  - D. All of the above

#### **Nursed to Death**

Apart from her penchant for poisoning patients, Jane Toppan was, by most accounts, an excellent nurse. Her tender ministrations, astonishing efficiency, and ebullient personality kept "Jolly Jane" in constant demand as a private nurse in Cambridge, Massachusetts, during the late nineteenth century. These welcome traits, however, masked a dark, considerably less convivial one—ingenuity in administering morphine and atropine in varying lethal doses. This sinister twist on caregiving enabled Toppan to murder dozens of people and yet remain undetected for 16 years.

Despite her outward joviality, Toppan nursed grudges. She resented her foster mother, who had abused her, and her foster sister, whose life seemed charmed. No doubt irked that the mother died of natural causes, Toppan dispatched the sister by slipping her a morphine-spiked tonic.

But hostility was not Toppan's only motive. She murdered one friend because she coveted the friend's job, a landlord because he had grown "feeble and fussy," and countless patients because she wanted to see how their nervous systems would respond to different poisons. Others she murdered for the sexual thrill—or "voluptuous delight"—she felt in the presence of the dying. Dispensing poison, she would later confess, had simply become a habit.

With each murder, Toppan grew bolder and more reckless. In 1901, she killed a dear friend, then the friend's grown daughter. "I went to the funeral and felt as jolly as could be," she exulted, after the second death. "And nobody suspected me in the least." But when Toppan went on to murder the friend's husband and other daughter just weeks later, suspicious family members requested toxicology tests. That's when Toppan attracted the attention of Harvard Medical School.

Harvard was not a new presence in Toppan's life; she had received her advanced training at an affiliated hospital. Yet supervisors at Massachusetts General Hospital had discharged her from the nursing school—amid rumors of falsified charts, petty thefts, and outlandish lies—and had refused to issue her a license. Now, more than ten years later, an HMS professor,



Edward Wood, found the evidence needed to indict her, and four HMS graduates helped ensure her incarceration, first in jail, then in a mental institution.

"Something comes over me," she once told one of those graduates, Henry Rust Stedman, the psychiatrist who diagnosed her "moral insanity." "I don't know what it is. I have an uncontrollable desire to give poison without regard to the consequences."

After confessing, in gleeful detail, to 31 murders and vaunting her ambition to have "killed more people—helpless people—than any other man or woman who ever lived," Toppan was committed to the Taunton Lunatic Hospital for life. There she died, decades later, snowy haired, docile, and unrepentant. In the early years, though, Toppan had proved a difficult patient: At mealtimes her attendants had needed to resort to placing her in a straitjacket and force-feeding her.

#### 2. Why did Nurse Toppan refuse to eat?

- A. She was convinced someone was trying to poison her
- B. A strict dietician with her own patients, she refused to eat the unwholesome hospital fare
- C. She wanted to lose the 50 pounds she had gained in jail
- D. She was staging a hunger strike in hopes that the hospital warden would agree to let her join the nursing staff

# OMAS ROWINNUSON (BRITSH, 1756–1827), THE ANATOMIST 18TH-19TH CENTURY: WATERCOLOR, 28 3 X 22.8 CM. ARTS MUSEUMS OF SAN FRANCISCO, ACHENBACH FOUNDATION FOR GRAPHIC ARTS, 1963 24 570



#### **A Fine Delicacy**

When Elizabeth Blackwell, the first woman to earn a medical degree in the United States, enrolled in New York's Geneva Medical College in 1847, she was, according to a Boston Medical and Surgical Journal editorial, "a pretty little specimen of the feminine gender." She would arrive in the classroom with great composure, remove her bonnet ("exposing a fine phrenology"), and take assiduous notes. "The effect on the class has been good," the editorial concluded, "and great decorum is preserved while she is present."

Emboldened by Blackwell's example, Harriot Kezia Hunt applied to Harvard Medical School that same year, including with her application a copy of the editorial. But Harvard found the idea of a woman settling into medical studies too unsettling. Sixty-five years after the School's founding, the Harvard Corporation concluded that it would be imprudent to begin enrolling women.

Three years later, encouraged by Blackwell's graduation, Hunt again applied to the School. The faculty voted to admit her, and the Corporation affirmed that vote. But this time the medical students protested, citing possible "feminine interference" with their studies. No woman of true delicacy would be willing to attend medical lectures with men, they declared, adding that they were loath to mix with any woman

who had so "unsexed" herself and "sacrificed her modesty." Threats against Hunt ended only after faculty leaders convinced her not to attend.

During the ensuing decades, applications from other women met with rejection. Donations as high as \$50,000 were offered as sweeteners; those too were rebuffed. It was only when a world calamity caused grave staff shortages in Harvard's teaching hospitals that women

3. What world calamity finally prompted Harvard Medical School to begin admitting women to its student ranks?

A. World War I

- B. The 1918 flu pandemic
- C. The Great Depression
- D. World War II

#### **Evasion of the Body Snatchers**

Harvard medical students of the early nineteenth century were expected to further their education by taking lecture notes, undergoing an apprenticeship, and—in the predawn hours—unearthing corpses from freshly dug graves.

John Collins Warren, the first dean of the medical college, encouraged his students to supplement the institution's meager supply of cadavers—and emulate his own youthful example—by staging night raids on ceme-



were at last allowed to attend the School.

teries. In one escapade, two students watched the burial of an almshouse resident, then marked the grave. Soon after midnight, they returned to the cemetery to disinter the body. But just as they were about to load their plun-

der onto a wagon, several guards sprang upon them.

In another grim caper, a student celebrated for his talent in procuring bodies returned to the grave he'd marked earlier only to find himself in the hostile clutches of cemetery watchmen.

- 4. What did these three medical students do to escape prosecution?
  - A. Drove about until morning, then returned to town with an air of innocence
  - B. Fled, then hid under a pile of wood shavings
  - C. Met the charges with great indignation and insisted that the watchmen were conspiring to extort money
  - D. All of the above

Josephine Barnaby agreed that the whiskey was vile, yet she sipped it anyway. Within minutes, she was gasping in agony. Within days, she was dead.

Barnaby had received the arsenic-laced whiskey while on vacation in Denver in April 1891. The package carried a Boston postmark; the bottle's label bore an unsigned greeting. "Wish

you a Happy New Year," it read.
"Please accept this fine old whiskey from your friend in the woods."

As she lay dying Barnaby tried to imagine who would want to kill her. Finally, she voiced the unthinkable. "Can it be possible," she whispered to the friends gathered around her, "that Dr. Graves could do such a thing?"

Thomas Thatcher Graves, Class of 1871, had a talent for elixirs—and a predilection for wealthy dowagers with nervous conditions. In Barnaby he had found his ideal patient, and he soon made himself indispensable. When her husband died leaving her a pittance,

Graves helped her challenge the will and gain a handsome settlement. She named him a beneficiary in her new will, and he promptly took over her financial affairs. His ever-tightening control made her balk, though, so he threatened to place her in an asylum. She in turn made plans to change her will. And then the mysterious package arrived.

Colorado authorities didn't take long to name Graves their chief suspect in the widow's murder. After a sting involving a Pinkerton detective, he was imprisoned, tried, and convicted. But before he could be hanged, the state supreme court set aside the verdict on technicalities and ordered a new trial.

Graves had found the first trial harrowing, and he could not bear the thought of a second one. So, on September 2, 1893, his jailers later reported, he

peeled the flypaper from his cell ceiling, soaked the strips, and ingested the arsenic-tainted residue.

Near his lifeless body was a suicide note dated,

oddly, months earlier. "Please don't hold any autopsy upon my remains," Graves

had written to the coroner. "The cause of death may be rendered as follows: 'Died from persecution—worn out—exhausted.'" A second letter to the public protested his innocence.

Indeed, not everyone was persuaded of the doctor's guilt. Other suspects abounded—Barnaby's vengeful and violent son-in-law, her quarrelsome friend, her conniving secretary, even the doctor's mentally unstable wife. And not everyone remained convinced of Graves's death. The following year several newspapers printed the rumor that he had absconded to Brazil, leaving a wax double of himself on his cell cot and bribes in the pockets of his jailers. Other

clues fueled that speculation: his widow's refusal to allow his remains to be embalmed, her later disappearance, and witnesses' claims that his casket, when opened at the gravesite against his widow's protests, did not contain his corpse.

#### 5. What, according to this rumor, did Graves's coffin hold instead?

- A. The body of a fellow inmate who'd had the misfortune to resemble him
- B. Three hefty sandbags
- C. A pine log
- D. A wax replica of the doctor, complete with mustache and beard

Answer Key: 1. D 2. A 3. D 4. D 5. C

# the flirtatious FELLINE - and other medical mysteries -

BY JONATHAN A. EDLOW

What caused a boy's eye to dilate suddenly?
A kindergartner to start bumping into
furniture? And a banker's lung cancer
to disappear? An emergency physician turns to
the case files to depict doctors as detectives.





### UNDER PRESSURE

Five-year-old Luisa Alvarez-Ruiz arrived at the emergency department of Children's Hospital Boston with a persistent headache. She had some nausea and sensitivity to light, but no vomiting. Her parents couldn't identify any triggers for the headache, and they insisted that she wasn't taking any medications. The pain, they said, seemed to wax and wane over the course of the day. Their daughter had no history of head trauma, no recent illnesses, and no family history of headaches. But lately her parents had noticed that Luisa, who lived with her grandmother every other month, had grown clumsy and was bumping into things.

The standard tests revealed nothing worrisome, and Luisa's physical examination was normal. But her headache had persisted for several months, so the emergency pediatricians ordered a neurological consult.

"That was the point where I became involved," says David Urion, a pediatric neurologist at Children's Hospital Boston and an HMS associate professor of neurology. His examination of Luisa uncovered only one unexpected finding: He couldn't detect the normal pulsations of her retinal veins. Yet without papilledema—a swelling of the optic nerves caused by increased intracranial pressure—he couldn't tell whether the absence of those

pulsations indicated a problem. It did suggest, however, that Luisa's pain was not a minor, primary headache disorder. And her history of bumping into things made Urion worry about the possibility of an infiltrating tumor. So he ordered an MRI.

"The initial report showed 'something funny,' "Urion says. "The neuroradiologists' huddled around her scans as if in Talmudic discussion." That "something funny" turned out to be a strange brightening of both optic nerves.

After requesting an ophthalmology consult, Urion received a stunning finding: Luisa was almost blind. Her visual acuity was 20/400 in her left eye; in her right eye, she had barely any vision.

It didn't take the triage nurse long to make notations in Shawn Matthews's chart: The ten-year-old had been playing in his room when he was seized by a sudden headache and blurred vision. His vital signs were normal, but his left pupil was markedly dilated.

"Before I even stepped away from the chart rack," recalls Gary Setnik, chairman of the Department of Emergency Medicine at Mount Auburn Hospital, "I was considering all the possible causes of headache and dilated pupil. Most of them were bad."

Shawn was sitting on the examination table with his parents and a younger sister clustered around him. Like the triage nurse, Setnik instantly noticed that the boy's left pupil filled the iris.

Yet Shawn's parents reported that their son had always been in excellent health. He had never had an eye injury, he took no medications, and he hadn't used eye drops. So Setnik turned his attention to the boy's nervous system, concerned that a cerebral artery aneurysm could be to blame. He checked Shawn's sensation, strength, and balance. He placed his stethoscope on the child's head to check for bruits-whooshing sounds that would indicate a tangle of abnormal cerebral blood vessels. He peered into

Shawn's retinas to look for signs of brain swelling or bleeding. He checked Shawn's neck for stiffness, an indicator of inflammation in the subarachnoid space, where the cerebrospinal fluid resides. All the tests were normal.

"I was struck by how well he looked," Setnik says. "It was just my gut feeling that he wasn't sick."

Then Setnik realized that Shawn's lopsided gaze looked familiar. Five years earlier, a graduate student had come into the hospital with one dilated pupil. While working in a chemistry laboratory, he had accidentally spilled atropine on his finger, then absentmindedly rubbed his eye. "Somehow," Setnik says, "the two cases linked up in my mind."

Atropine is an alkaloid extracted from the Solanaceae family of flowering plants, whose most infamous member, Atropa belladonna, or deadly nightshade, has a long history of use as a medicine, a poison, and a cosmetic. Italian for "beautiful lady," the species name, belladonna, derives from a popular practice during the Renaissance, when women would dab the juice of the berry into their eyes, knowing the chemical would dilate their pupils and hoping it would increase their allure.

"In medicine, we feel about 80 percent of diagnoses can usually be made by the history alone," says Setnik. "So I started over." Was there any possible way, he asked Shawn's parents, that the boy could have gotten something into his eye? Was anyone else in the family using eye drops? Were there any old medications in the house? Suddenly Shawn's mother looked up and said, "Oh, my God! What are we putting in Fluffy's eyes?"

"It turns out," Setnik says, "that Fluffy was the cat, and she had some type of eye problem that the veterinarian was treating with an ointment." Then Shawn remembered: Right before developing his headache, Fluffy had rubbed up against him and demanded to be petted.

"I literally said, 'That's it!" "Setnik says. He asked Shawn's mother to retrieve the cat's medication. A half hour later, she returned with an aluminum tube whose label read "I percent atropine." Like the absentminded graduate student, Shawn had touched his eye, transferring traces of the ointment from the cat's fur.

"I told the family that Shawn's pupil would likely stay dilated for seven to ten days but that his eye would ultimately be completely normal," Setnik says. What had seemed like a medical crisis was nothing more than a brush with an affectionate pet.



ture, and the results gave him the clue he needed. Luisa's cerebrospinal fluid was clear. The protein and glucose levels were normal, and there were no abnormal cells or bacteria. But the pressure in her skull was two and a half times the normal level.

"Now we had a diagnosis—pseudotumor cerebri, which occurs when intracranial pressure increases for no obvious reason," says Urion. "But it was a diagnosis that only raised another series of questions. To have that diagnosis in a skinny five-year-old was pretty unusual in itself." Also known as idiopathic intracranial hypertension, pseudotumor cerebri, a rare condition, is most often seen in overweight adult women.

Urion quizzed Luisa's parents again. Were they sure she took no medications? Did she have access to the medicine of other household members?

"The family took a little umbrage at our repeated questions," Urion says. Finally the family asked what could cause the condition, and Urion gave them a list. They stopped at the word vitamins and asked, "Could fish oil have these vitamins?"

The next day, Luisa's grandmother brought in a bottle of Smith's Fish Emulsion. Every other month, for more than a year, the grandmother had poured Luisa

a tablespoon of the fish oil, giving her the recommended daily dose—for an adult of vitamin A, supplementing what Luisa already received in her normal diet. The child had acute vitamin A toxicity.

Luisa underwent multiple lumbar punctures and took diuretics to reduce the pressure. Not only was further loss of vision halted, but Luisa also recovered some of her eyesight. She still has occasional headaches.

What the case taught him, Urion says, is the importance of teasing out medical histories. "Four of us, all good doctors, had asked about medication ingestion," he says. "But none of us had asked the question the right way. The family finally helped us out by asking us directly, 'what are you worried about?' That helped us to be more direct with our questions and to get the right answer."



## THE CASE OF THE DISAPPEARING CANCER

**The doctor pulled Phillip Bradford's** wife into the hospital corridor to deliver the news: The odd nodules on her husband's chest x-ray suggested lung cancer. He needed a thoracotomy—the surgeons would open his chest up like a clamshell—so the suspicious tissue could be biopsied.

But when he learned the diagnosis, the 33-year-old patient wasn't frightened. "I simply didn't believe that's what I had," he says. "I was healthy and a non-

smoker. I wanted a second opinion."

Earle Wilkins, Jr. '44, then a senior thoracic surgeon at Massachusetts General Hospital, remembers the case clearly, despite the passage of three decades. "I was struck by two things," he says. "First, if this was metastatic cancer to the lung, I could detect no primary site. And second, one of the nodules on the latest

x-ray seemed slightly smaller than it had been on the previous film. If that was true, a cancer would be unlikely." The thoracotomy was cancelled.

Bradford improved and remained well for almost a year. But then he started coughing and running a fever, displaying all the symptoms that had first brought him to the doctors' attention. Once again, his chest x-ray blossomed with ominous nodules; several weeks later, as with the previous episode, his symptoms mysteriously vanished.

This time, Wilkins sent Bradford to Robert Rubin '66, then an infectious disease specialist at Massachusetts General Hospital and now associate director of the Division of Infectious Disease at Brigham and Women's Hospital. Rubin reasoned that if the nodules that appeared on the x-rays were always in the same location, a chronic structural or anatomical lesion within the lungs would be the likeliest cause. Each x-ray showed, however, that different episodes affected different parts of the lungs, suggesting an environmental trigger. "And because none of the multiple tests had revealed the presence of a microbe that might have been the culprit," Rubin says, "the question of hypersensitivity pneumonia immediately arose."

Hypersensitivity pneumonia occurs when a lung becomes inflamed after breathing air that contains organic dusts laden with such biologic stowaways as mold, fungi, bacteria, or spores. Although these substances are not necessarily as toxic or invasive as the viruses and bacteria that cause typical infectious pneumonia, the immune system still perceives them as foreign invaders. Within hours of being exposed to these dusts, people with hypersensitivity pneumonia often develop symptomsincluding fever, chills, headaches, cough, and shortness of breath—that can be easily misdiagnosed as flu, bronchitis, another kind of pneumonia, or, in rare cases, lung cancer.

Among the more important agents of biological decay are thermophilic actinomycetes, the primary decomposers of such tough plant materials as bark, leaves, and stems. Exposure to spores from these bacteria place farmers, pigeon breeders, and parakeet fanciers at

#### is chest x-ray blossomed with ominous nodules; several weeks later, his symptoms mysteriously vanished.

elevated risk for hypersensitivity pneumonia. People who harvest sugarcane and coffee beans, cure tobacco, or work with wood dust, cheese, maple bark, mushrooms, soybean feed, or barley can develop the syndrome as well.

Bradford, though, did not farm, breed pigeons, or harvest sugarcane. He worked as an executive in a banking firm.

"I questioned Bradford at length about humidifiers, his home heating system, and hobbies," Rubin says. "But I couldn't come up with any exposures that would account for his symptoms." Finally, Rubin's extensive questioning uncovered a clue: The symptoms had begun shortly after Bradford's firm had moved into new office space.

The theory, though, had at least two glaring problems. Bradford went into the office every day during the workweek. Why would the symptoms be intermittent? And why weren't his colleagues get-

When Rubin checked the maintenance records of the office building's HVAC system, he found that the air ducts had been blown clean twice. And the schedule jibed perfectly with the appearance of Bradford's symptoms.

Rubin's next step was to send a sample of Bradford's blood for analysis. He ordered a precipitin test to determine whether any antibodies in the blood would clump—or precipitate—with an antigen from the bacteria. The blood test was negative.

But Rubin persisted. "I didn't have much faith in the test," he says. "If it's positive, great, but if it's negative, that doesn't necessarily mean anything." So he checked the ducts himself. "I put on work clothes and climbed up a ladder," he says. "I took samples and swabs from many areas, especially wet ones."

Next, Rubin smeared the material onto culture plates. Within days, thermophilic actinomycetes were thriving in the culture. Every sample, from every site tested, produced them.

During this phase of the investigation, Bradford inadvertently inhaled another dose of air from the ducts and promptly developed mild symptoms again. Another set of x-rays showed a reappearance of the same ominous nodules, clinching the diagnosis.

But Rubin had one last mystery. Why hadn't Bradford's fellow office workers also become sick? The full answer to this question remains elusive, but other building-related clusters of hypersensitivity pneumonia have shown the same phenomenon, suggesting that an individual's degree of exposure and genetic predisposition both play roles in determining who gets sick.

After Rubin's investigation, the building's ducts were thoroughly cleaned. And Bradford, who worked in the building for four more years, never had another bout of the pneumonia.

"If I get any credit as the patient's first physician," said Wilkins during a clinical case conference later held at Massachusetts General Hospital, "it is for picking a detective as well as a physician to take over this diagnostic problem." ■

Jonathan A. Edlow, MD, FACP, is vice chairman of emergency medicine at Beth Israel Deaconess Medical Center and an associate professor of medicine at Harvard Medical School. These stories were adapted with permission from his most recent book, The Deadly Dinner Party & Other Medical Detective Stories (Yale University Press, 2009). Edlow is also the author of Bull's Eye: Unraveling the Medical Mystery of Lyme Disease (Yale University Press, 2003).

The names of the patients in these stories are pseudonyms.

# Catalyst

A game-changing Harvard program sparks collaborations among disparate researchers.

BY JESSICA CERRETANI



**Despite their ties, Harvard-affiliated hospitals have** historically competed with one another—for faculty, patients,

and financial support. This sense of rivalry has meant that the thousands of researchers throughout the School and its hospitals felt not just a physical separation but a symbolic one, and they had little motivation to interact with one another.

That culture has been changing, however, and in the past two years, a compelling new force has helped unite investigators around one crucial common goal: to cure human illness by translating basic laboratory research into patient care. The Harvard Clinical and Translational Science Center, better known as Harvard Catalyst,

## change change



now sparks innovative collaborations among researchers—not just among scientists at HMS and its seventeen affiliated hospitals and institutions, but also throughout Harvard University's eleven schools. It's a stunning achievement, but one that HMS Dean Jeffrey Flier believes comes naturally to investigators. "We operate on the

belief," Flier says, "that the people here want to come together because they really want to make those discoveries that save lives."

In a test of that conviction, Flier approached Harvard's affiliates in 2007 to persuade them to collaborate with the shared purpose of advancing clinical research. In truth, the affiliates didn't

have a choice: The National Institutes of Health (NIH) had announced that it would be phasing out the individual clinical research grants historically awarded to Harvard's teaching hospitals. Instead, Harvard would have to apply for a five-year, \$117.5-million award to be shared by HMS and its affiliates. Faced with the prospect of

**The team coined** an inspired name for the clinical and translational science center: Harvard Catalyst. The new title evokes images of laboratories, energy, and innovation—and that's no accident.

losing tens of millions of research dollars, this competitive community *had* to come together. The University and its affiliates would need to cede control of the grant money—and therefore of publicly funded clinical research to HMS. "We needed unprecedented support from the University and the hospitals," says Flier. "And we got it."

HMS also got the grant—no small feat, considering that the team, spear-headed by Lee Nadler '73, dean for clinical and translational research at HMS, had just a hundred days to craft the proposal. But getting the grant meant the real challenges had just begun. "The grant was approved on a Thursday," Nadler says. "That Sunday mornday."

ing I got a call from the NIH telling me, 'Okay, you're funded. Start spending.'"

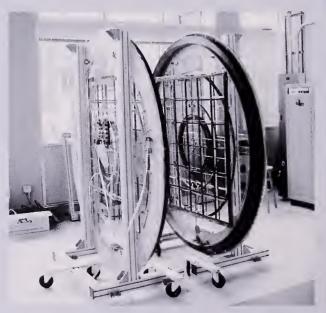
#### Bright Ideas

It was a massive undertaking, but one that HMS was eager to tackle. This spirit of collaboration and discovery drove the School's approach to the new Harvard Clinical and Translational Science Center—admittedly not the catchiest of titles. "During our first few weeks of funding, it was hard to explain to people what the center actually was," says Nadler. So the team coined an inspired name for it: Harvard Catalyst. The new title evokes images of laboratories, energy, and innovation—and that's no acci-

dent. "All the components necessary to make an impact on human illness already exist at Harvard," Nadler explains, referring to the more than 17,000 investigators at the University and its partnering institutions. "Unfortunately, few of those components have been in the same 'reaction vessel,' leaving our potential virtually untapped."

The solution was clear: encourage researchers to forge novel alliances by eliminating obstacles to such collaborations—in short, unite those researchers in one large reaction vessel. Key to this process has been the creation of Harvard Catalyst's website, which connects researchers and facilitates teamwork by detailing investiga-

written in the



STARS

Mast peaple appraach the praspect of an MRI exam with a sense of dread. The caffin-sized quarters and timpani-like racket of the machine canspire to create an environment that can make even the least claustraphabic patient uncamfartable.

Naw, an innavation by Ranald Walswarth and his graup at the Harvard–Smithsanian Center far Astraphysics in Cambridge, Massachusetts, has the patential ta make the pracess mare talerable—and accessible. Their apen-access, walk-in, law-magnetic field MRI system lets patients be scanned while sitting, standing, ar lying dawn, a madification that nat anly pramises to ease nerves but also allaws far mare precise imaging af bload flaw and airflaw, which depend an pasture.

The idea far the scanner came ta Walswarth, a seniar lecturer an physics at Harvard and seniar physicist at the Smithsanian Institutian, same 15 years aga when he was developing atamic clacks, which use nable gases like helium and xenan ta pravide precise measurements af time and frequency. Far Walswarth—whase ather

HOTO MATTHEW ROSEN



research interests include Einstein's theary of relativity and the detection af new planets—the link ta medical imaging made perfect sense. "You can easily detect helium and xenan in the bady if they're magnetized with a laser befarehand and then inhaled or injected," he explains. (Standard MRI scanners praduce images by detecting the bady's water and fat within a magnetic field.) "Because the gas magnetization is long-lived and dane ahead af time, it doesn't require the large magnetic fields af conventional scanners. Yau can create an open, walk-in imaging system that daesn't affect pacemakers and medical implants, and allows imaging for all bady pastures. It's a great spin-off from physics ta medical imaging."

Far several years, Walswarth built and refined the scanner as a side project. His available funding, however, cauld anly take him so far. "It's hard to get maney far things that are transitioning between physics and biamedical imaging," he says. "Nat many pragrams fund them." Then he learned about Harvard Catalyst.

If ather Catalyst grants have helped cannect disparate researchers with cammon goals, Walswarth's award has helped him take his inventian ta the next level by putting it in the hands of physicians. The Catalyst grant has paid far the scanner's move fram Walswarth's lab ta Massachusetts General Haspital's Martinas Center in Charlestawn, installation of tile flaoring in its new hame, and tweaks to the machine to make it technically aptimal. "These are grungy, nan-sexy things," Walsworth says, but they are changes that lay the groundwark—literally—far future clinical research. In fact, he recently learned that he will receive funding fram the Natianal Institutes of Health far pilat lung imaging studies with the scanner, thanks in part to the scanner's relacation.

While frustrating, gaps in funding like those that have stalled his progress also present appartunities, says Walsworth. "We've gat these well-financed labs, but it's difficult to bridge to other researchers. That's what Catalyst is doing, and I'm very grateful for it."

# WALK this way



STARTING OFF ON THE RIGHT FOOT: Researchers hope to identify architectural and design elements that inspire physical activity.

ith obesity at epidemic proportions, it's clear that physical activity is crucial for good health. But what will spur confirmed couch potatoes to put down the remote and get moving? Mossochusetts General Hospital internist ond pediatrician Nicolas Oreskovic hos an inspired suggestion: Creote environments that encourage people to wolk more.

Oreskovic, also an HMS instructor in pediotrics, has previously researched the effects of the built environment—the loyout and location of buildings, walkwoys, and roodways—on childhood obesity. His findings hove been intriguing, if not surprising. In o study published in the July 2009 issue of Clinical Pediatrics, for example, he and his team found an association between children's body-moss indexes and the distances from their homes to schools ond subwoy stotions, os well os the amount of nearby open spoce.

Now Oreskovic is toking his research one step further. Working in colloboration with colleagues at MGH and of the Horvord University Graduote School of Design—and funded by a pilot gront from Horvord Cotolyst—he is using functional MRI neuroimaging technology to pinpoint just how the humon broin responds to porticular orchitecturol and design elements. "We're trying to crock the nut of the humon subconscious by determining whot promotes the desire to wolk," soys Oreskovic. "If our theory is correct, the oreos of the broin ossocioted with motor function and emotion should react positively when a person views certoin orchitecturol environments."

The ideo of reoching out to researchers in seemingly unrelated fields isn't new to Oreskovic, who met some of his co-investigators when he took courses ot the design school while pursuing his moster's degree in public health. Still, he ocknowledges that such connections oren't forged so easily for many of his peers. "In medical research we tend to work in our own little silos," he exploins. "Yet there's such o wealth of knowledge out there that we could draw from."

Oreskovic hopes that harnessing this knowledge will help guide the development of novel ways to address the obesity epidemic, with the ultimote gool of using orchitecture and design to improve humon health. In the meantime, he's thonkful for Horvord Catalyst's support of this study. "The infrastructure of Harvard Cotolyst is what's made this work possible—it's been easy and poinless for me to connect with other researchers," he soys. "Thot's unimoginable ot many other institutions."

tors' expertise and latest discoveries. An updated search engine scours the site's pages, applications, and databases to help visitors locate people, publications, clinical trials, and core facilities affiliated with Harvard.

This September, a new application was added that helps investigators find and secure funding by giving them collaborative, Web-based tools for identifying opportunities, building project teams, and developing proposals. The application, called Grant Central, continues Harvard Catalyst's mission of removing barriers to research by streamlining the grant process. Even more functions for the site are being planned.

Such cutting-edge technology is impressive, but the real test of Harvard Catalyst will be its ability to deliver clinical and translational science. Judging by its performance so far, that goal is in sight. In the first round of one-year pilot grants this past spring, 218 investigators from 23 Harvard schools and hospitals received a total of 62 grants of \$50,000 each; a second round of pilot grants announced this fall will underwrite an additional 65 projects.

These diverse research teams include neonatologists and microbiologists, informatics experts and endocrinologists, and cancer vaccine specialists and polymer engineers. Together, these and other specialists are making bench-tobedside advances: One basic scientist who discovered an anticoagulant protein in the E. coli bacterium, for example, has joined with clinicians to explore developing that protein into a new class of

blood-thinning drugs.

When it comes to Harvard Catalyst, however, game-changing collaborations like these are just the start. Plans to teach and assist researchers are also in the works. "We're revolutionizing our education program by integrating the School's master's programs and offering more courses to help investigators apply laboratory research to human subjects," say Elliott Antman, director of the Harvard Catalyst Postgraduate Education Program. "We want young researchers to come in with a baseline of knowledge and leave with the comprehensive knowledge needed to succeed as a clinical investigator."

Harvard Catalyst will also support researchers by providing access to what

Nadler calls a "dream team" of biostatisticians and other experts who will help design, execute, and analyze studies; to shared laboratory space; and to professional staff, such as nurses. "This approach," says Nadler, "is how you help clinical investigators succeed."

Through Harvard Catalyst, HMS is also part of a group of nine institutions that recently received a two-year, \$15million stimulus grant. The grant will

fund a new national research resource discovery program called the eagle-i Consortium, which aims to help investigators across the country share scientific resources critical to advancing clinical and translational research. "This project is about linking scientists nationally to resources, technologies, and opportunities," says Nadler, "and about making invisible resources visible to the researchers who need them."

For Flier, though, such achievements are just the beginning. "These are the next generations of researchers we're helping train and connect," he says. "This work will be transformative."

Jessica Cerretani is assistant editor of the Harvard Medical Alumni Bulletin.

For more information about Harvard Catalyst, visit http://catalyst.harvard.edu.

## neighborhood HEALTH PLAN

ows are meant to pratect a community, but when it comes to immigrants, feors obout enforcement palicies may be hazordous to their health. That's the theory posed by Koren Hocker, executive director of the Institute far Cammunity Heolth ond on HMS ossistant professor of medicine. In her wark os o physicion of the Combridge Heolth Alliance, Hocker has observed firsthand the effects of those feors an her potients: missed oppointments, unfilled prescriptions, and other forms af health care under-utilization that she suspects stem from patients' concerns that their immigrant status—whether documented ar undocumented-might be expased.

"Whot's so omozing about this project in particular," Hocker soys, "is that members of the cammunity we're studying-Everett, Massochusetts—hod similar concerns and approached me to work with them on this issue. Everett hos undergone o huge demagraphic shift in a short period of time." Hocker cites the city's influx of fareign-barn residents, including Brozilions, Haitians, and Moroccons.

Horvord Catalyst provided Hocker with the perfect oppartunity to reach aut to community partners, local representatives of immigrant communities, and other researchers interested in the study. "The ocademic enviranment doesn't olwoys pravide the resaurces for calloborotian," she explains. "And this particular oreo of study doesn't fit within mainstream research."

Armed with a Horvard Catalyst pilot grant, Hacker has been able to build those cannections and canduct a community-based porticipotory research praject. Working with cammunity co-investigatars and investigatars at the Horvard School of Public Health, the Horvord Kennedy School, and Tufts University, she hos assembled a teom af community and ocademic investigatars ta explore this issue. Their first step was ta canduct focus graups of Everett residents to discuss the challenges foced by the community. She is olso planning on electronic survey of some 300 locol physicians to evoluate their experiences and ta seek salutions.



FEAR FACTOR: Concerns about immigration policies may keep patients away from health care providers.

"We hope ta determine what else we con do to ossuge unfaunded feors omong immigrants sa they take care af their health," Hacker soys. "We also need to figure out how to help the cammunity odjust to demagraphic changes and heal."

Although Hocker's ultimote objective is to establish enough preliminory doto to ottract funding far larger studies af ather cammunities, she's quick to recognize the promise of her current work with Horvord Catalyst. "If it turns aut that we dan't get mare funding, but Everett hos o healthier community," she muses, "have we nat achieved our goal?"

#### CLASS NOTES

#### Edmund Meadows

1944 "I'm living with the aftereffects of bladder cancer, but longevity—for more than 88 years—has been my strong suit. My grandson Jeffrey is currently a pediatric interventional cardiologist."

#### Martin Lubin

1945 "In collaboration with my son Adam, I have published a new strategy for treating many tumors, such as lung and pancreatic cancer, glioblastoma, melanoma, mesothelioma, osteosarcoma, soft-tissue sarcoma, and T-cell acute lymphoblastic leukemia. Our paper on the topic appeared online in PLoS ONE on May 29. An abstract of our recent mouse studies was presented this past April at the annual meeting of the American Association for Cancer Research. We now hope to find major funding to support extensive animal testing, and we welcome suggestions for obtaining funding quickly."

#### William Owen

1949 "Margaret and I continue to be in good health, although I have a touch of chronic obstructive pulmonary disease, which slows down my ability to play tennis and golf. Sorry to have missed the 60th reunion. I plan to catch the 65th, God willing."

#### Herbert Ausubel

1954 "I remain in active practice with my son, Dr. Ian Ausubel, and two other associates. My daughter, Dr. Lara Ausubel, has moved from the Brigham in Boston to the City of Hope in Duarte to continue her research, necessitating trips to California to see our grandchil-

dren. Ian and his fiancée are planning their wedding.

"My greatest joys have been seeing our children become productive members of society and living to see the next generation. The love of medicine keeps me in active practice, and having my son working with me is something special. The Almighty has blessed Stephanie and me with health sufficient to maintain an active lifestyle—to travel through the Andes mountains, to talk to students at a university in an Islamic country on Israel and the Arab world, to visit Vietnam and observe the changes that have taken place in that country. By nature, I am an optimist and so I will not dwell on the negatives. Instead, I will focus on my prayer for true peace in the Middle East.

"And now my second task: the completion—and publication—of the six-book series on the ancestors of our children, which will serve as a microcosm of the history of the Jewish people over three millennia."

#### Ralph Heising

1955 "My beloved wife of 54 years, Nancy, died on December II,



2008, of respiratory failure. She is sorely missed."

#### John Laszlo

"I'm happy to say that all goes well with our family. I'm still playing tennis, despite my artificial knees, and am glad to be active. Pat and I had a wonderful trip through II national parks in Utah and Arizona. I am currently engaged in interesting consulting work on DNA vaccines and electroporation."

#### Ernest Picard

"I continue to serve in a volunteer job with the Serving the Health Information Needs of Elders (SHINE) program and am staying out of trouble. Joyce and I had our 55th anniversary this year!"

#### Mitchell Rabkin

recently coauthored an opinion piece on health care reform, which was published on the website of the American Academy of Arts and Sciences, where he is a fellow.

#### John Grover

"Phillipa and I are well (fingers crossed at the moment) and are awaiting results of deliberations by President Obama and Congress on health care. We should worry less about government's role in health care and more about the power of health care over government."

#### Arnold Katz

"I am now an HMS visiting professor of medicine, as I gave three lectures on cardiac physiology and heart failure as part of the second-year core curriculum. Looking up

HOTOS LIZA GREEN



at where I sat 55 years ago was spooky."

#### John Ross

"I recently headed up a group of professors at the University of Florida to create a community-based, free educational seminar called 'What Parents and Adolescents Need to Know About Health and Competitive Sports,' which attracted more than 500 attendees."

#### Mark Perlroth

"I am acclimating to retirement. I am busier than I thought I would be and continue to attend the same weekly conferences at Stanford as before. I see Rex Jamison '60 regularly at Grand Rounds and I try to communicate—mostly by email—with some of our classmates. My health is good and Karen and the kids are well and busy."

#### Herbert Benson

1961 was named the 2009 recipient of the Mani Bhaumik Award by the Cousins Center for Psychoneuroimmunology at the University of California, Los Angeles. The award is presented each year to an individual who advances understanding of the mind's role in health and healing.

#### Norman Cohen

"This spring, our daughter Celine gave birth to a baby boy, William Heath Stumbles, in Sydney, Australia. In addition, I was chosen to receive the Kaiser Award for Excellence in Teaching by the volunteer clinical faculty at the University of California, San Francisco Medical School. I teach at the San Francisco VA Medical Center in the hematology—oncology clinic once a week."

#### Yeu-Tsu Lee

"Aloha to my classmates! Since my retirement in 1999, I have kept busy by traveling to Taiwan three times a year to teach medical students and train surgical residents. I have also made medical missions to Honduras, Laos, and the Philippines. See you at our 50th reunion in 2011!"

#### James Beck

"My wife, Susan S. Beck, JD, HLS '68, died March 7 after a long illness. We have posted photos of Susan and a recording of the funeral service to the Web. If you would like the Web address, please write me at jbeckl@partners.org."

#### David Sachar

delivered both the keynote and concluding addresses at the Third International Symposium on Biomolecular Technology at Shahid Beheshti University of Medical Sciences in Tehran, Iran, in May.

#### Frank Williams

ical and surgical ophthalmology in Clearwater, Florida, and do volunteer medical teaching and eye surgery in Bhutan twice yearly. A high point of my visit there in November 2008 was attending the coronation of the fifth king of Bhutan as a guest of the royal family. Jackie and I also visited Zambia and Botswana that summer."

#### John Mills

"I'm enjoying my work in many different environments—medical practice, virology research, diagnostic lab services, and biotechnology. My wife and I traveled to Laos in July where we participated in an HIV training course with our daughter, Christina, who has worked in a pediatric hospital there for a few months."

#### James Nelson

"My retirement is spiced up by my work as a partner in a small biomedical venture capital firm. I developed a new catheter design and have a new MRI contrast media grant in progress. Working on the NIH Challenge Grants provided a little light reading this summer!"

#### Harold Sox

is retiring as editor of the *Annals of Internal Medicine* after eight years in the position. He is considered a leader in the field of health policy.

#### David Bergman

position as medical director of Casa Palmera, a residential treatment center in Del Mar, California, that specializes in the care of people with addiction, eating, mood, and chronic pain disorders. Although I am retired from office practice, I continue to teach at the University of San Diego Medical School, where I'm an associate clinical professor of psychiatry."

William Shipley is a co-recipient of the 2009 ASTRO (American Society for

### CLASS NOTES

Radiation Oncology) Gold Medal Award, presented annually to two individuals for achievement in the field of therapeutic radiology and oncology. Shipley is chair of the genitourinary oncology unit at Massachusetts General Hospital and is the Andres Soriano Professor of Radiation Oncology at HMS.

#### Thomas Gutheil

**1967** "After two years as president of the International Academy of Law and Mental Health (the international forensic psychiatric organization), I turned over the job to my successor at the organization's annual congress in New York in June. I was then honored by the establishment of the Prix Thomas Gutheil, to be awarded every two years for high achievement in the area of clinical forensic practice and given this year to Jacques Talbot, a forensic psychiatrist at the Institut Philippe-Pinel de Montréal in Quebec, Canada."

#### Eric Chivian

1968 had his book, Sustaining Life: How Human Health Depends on Biodiversity, named one of the best biology books of 2008 by Library Journal. Chivian directs the HMS Center for Health and the Global Environment.

Stephanie Pincus
was recently named to the
Board of Directors for the
Center for Exploratory and
Perceptual Art in Buffalo,
New York. She is also the
founding director of the
RAISE Project, which aims
to ensure that notable
women are nominated for
national awards in science,
medicine, and engineering.

Ralph Steinman

was one of three doctors to be awarded the 2009 Albany Medical Center Prize in Medicine and Biomedical Research, the largest national award in medicine. Steinman, who received the award for his groundbreaking work in immunology, is the Henry G. Kunkel Professor of Cellular Physiology and Immunology at Rockefeller University in New York City.

#### Martin Crane

1969 has assumed chairmanship of the Federation of State Medical Boards, a nonprofit organization that is the national authority in the field of medical regulation. Crane is the former chair of the Massachusetts Board of Registration in Medicine.

Harvey V. Fineberg

was honored in June with the Harvard Medal, which recognizes extraordinary service to the University. Fineberg is a former dean of the Harvard School of Public Health and the current president of the Institute of Medicine.

Joel Greenberger "Our first-born, Rachel, is now in medical school. Emily begins her second year at Dartmouth, Josh is at the University of Pittsburgh School of Pharmacy, and Ben is a junior in pre-med at Harvard. I continue to research new anti-radiation drugs and stem-cell transplantation for irradiation injury. I am beginning year 17 of my chairmanship in radiation oncology at the University of Pittsburgh School of Medicine."

Peter Howley

**1972** was recently awarded a grant from the Angelman Syndrome Foundation. His research will



focus on identifying the substrates and pathways for the neuronal pathogenesis underlying Angelman Syndrome, a neurogenetic disorder.

James Kirklin

1973 was elected president of the International Society for Heart and Lung Transplantation, a multidisciplinary professional organization dedicated to improving the care of patients with advanced heart or lung disease through research, education, and advocacy for transplantation, mechanical support, and innovative therapies. Kirklin is currently director of the University of Alabama at Birmingham's Division of Cardiothoracic Surgery.

David Mauritson

1974 "I graduated from the J. D. Birmingham School of Law in May 2008 and am currently a partner in the law firm of Grammer and Mauritson in Northport, Alabama. I've kept my day job in cardiology because my daughter decided—at age 30—to go to medical school. I also remain an active flight instructor in airplanes, helicopters, gliders, and gyroplanes."

Christopher Rose

"Randi and I are sorry we missed the reunion. I am still trying to demonstrate the utility of electronic medical records to analyze the processes and outcomes of a large radiation oncology practice. I hope this will help identify best practices and improve cancer care incrementally. We welcome visits from classmates who are in Southern California."

Frank Valone

was named chief medical officer of FibroGen, Inc., a San Francisco, California-based company that researches treatments for such conditions as tissue-fiber disorders and diabetic complications.

\_\_\_JudyAnn Bigby

1978 received the 2009 Ruth M.
Batson Social Justice Award
from the HMS Office for Diversity and Community Partnership. Bigby is the Massachusetts secretary of health and human services. Before accepting that position, she was director of community health programs at Brigham and Women's Hospital.

William Frist

has joined Aegis Sciences Corp., a Nashville, Tennesseebased forensic chemical and drug-testing laboratory, as a health care advisor.

Daniel Podolsky

is the recipient of the American Gastroenterological Association's 2009 Julius Friedenwald Medal for Distinguished Service in the field of gastroenterology. He is currently the president of the University of Texas Southwestern Medical Center in Dallas.

John Kelly

1979 has been named chief medical officer of Lifeclinic International, where he develops strategies to improve the health and wellness of those who use the company's blood pressure monitors, health stations, and health management systems.

Samuel Stanley, Jr.

1980 is the new president of Stony Brook University in New



York. He was previously the vice chancellor of research at Washington University in St. Louis, Missouri.

James O'Connell

was named the J. H. Kanter
Prize Laureate in August, honoring his work in health care
delivery for low-income and
homeless people around
Boston. The prize provides
\$100,000 to allow O'Connell
to continue his work.

Robin Avery

1985 "The transplant programs at the Cleveland Clinic are rapidly expanding, which keeps me busy. My husband, Mike Lauer, is now a division director at the National Heart, Lung and Blood Institute and commutes from Cleveland, Ohio, to Washington, DC. Our sons, Nathan and Danny, are 17 and 15."

Jim Yong Kim

1986 became president of Dartmouth College in July. Kim was previously the chair of the HMS Department of Global Health and Social Medicine, HMS professor of global health and social medicine, and the François-Xavier Bagnoud Professor of Health and Human Rights at the Harvard School of Public Health.

#### Malcolm Reid

1987 "I was recently appointed to serve on the New York State Hospital Review and Planning Council. I am the chairman of the Department of Rehabilitation Medicine and an associate medical director at St. Luke's Roosevelt Hospital Center in New York City."

#### Laurence Ronan

received the 2008 Lifetime Achievement Award from the HMS Office for Diversity and Community Partnership for his work as director of the Thomas S. Durant, MD, Fellowship for Refugee Medicine program. Ronan is an HMS instructor in medicine at Massachusetts General Hospital.

#### Richard Waldmann

"I am enjoying family life in Milton, Massachusetts, with my wife, Janet, and our two children, Jonathan (age 5) and Clarissa (age 7). I work in a neonatal intensive care unit with a sideline in equities trading."

#### Paul Farmer

1990 was awarded the Lois Pope LIFE International Achievement Award in February. The award honors his work in treating infectious diseases in impoverished nations. Farmer also succeeds Jim Yong Kim '86 as chair of the HMS Department of Global Health and Social Medicine.

#### John Nash

"Susan and I are enjoying raising our six children, ranging from a toddler to teenagers. My work is very rewarding despite being very busy. I work in medical administration in my 'spare' time."

#### Robert Friedlander

was named HMS professor of neurosurgery in 2008. He is vice chairman of the Department of Neurosurgery at Brigham and Women's Hospital and was recently appointed to the National Advisory Council of the National Institute of Neurological Disorders and Stroke.

#### Andrew Sussman

was recently appointed the president/chief operating officer of CVS MinuteClinic and senior vice president/associate chief medical officer of CVS Caremark.

#### Rafael Campo

1992 received the 2009 Nicholas E.
Davies Memorial Scholar
Award for humanism in medicine from the American College of Physicians. In July, he was also appointed director of the Office of Multicultural Affairs at Beth Israel Deaconess Medical Center, where he is an HMS associate professor of medicine.

#### Pratik Multani

has become vice president of clinical development at Fate Therapeutics, Inc., where he is leading upcoming clinical trials of stem cell modulators, small molecules, and biologics that guide cell fate for therapeutic purposes.

#### Lisa Clark Pickett

was recently appointed chief medical officer of Durham Regional Hospital in Durham, North Carolina. She is also codirector of the Critical Care Unit, chief of the Division of General Surgery, and graduate education medical director for surgery at that hospital.

#### B. Price Kerfoot

1996 developed a new learning technology platform, "Spaced Education," or SpaceEd, which Harvard recently adopted. Kerfoot is an HMS associate professor of surgery.

#### Deborah Hung

1997 received the 2009 American Society for Microbiology Merck Irving S. Sigal Memorial Award for her work in the microbiology of common infectious diseases.

#### Howard Chang

1999 was named an Early Career Scientist by the Howard Hughes Medical Institute. Chang, a dermatologist at the Stanford University School of Medicine, will receive a sixyear appointment to the institute as well as a \$1.5-million research budget.

#### Glenda Callender

residency at the University of Chicago Hospital in 2007 and am currently completing fellowships in surgical oncology and endocrine surgery at the M. D. Anderson Cancer Center in Houston, Texas."

#### Martin Burke

2002 was named an Early Career Scientist by the Howard Hughes Medical Institute. He is a chemical biologist at the University of Illinois at Urbana-Champaign.

#### Oni Blackstock

was one of two physicians awarded the 2009 Minority Clinical Fellowship Award by the HIV Medicine Association. She is a resident at Montefiore Medical Center in Bronx, New York.

S DEAN OF HARVARD MEDICAL SCHOOL, DANIEL Tosteson '48 had an overarching ambition: to smooth the paths its students and faculty walked. Dan succeeded in paving established routes for the HMS community during his two decades in the post, from 1977 to 1997. He also created some new

Dan died at the age of 84 on May 27, 2009 at his home in Boston after a brave struggle with Parkinson's disease. He is

best known for bringing about radical changes to the School's approach to medical education which carried the cognomen New Pathways. Its purpose was to create a lifelong love for learning medicine and to prepare the School's students for the changes in medical practice they would surely encounter. Dan built the medical education center that now bears his name to house this curricular reform. It included student societies that became centers for student-faculty exchange; rooms for student-driven case-analysis sessions that were intrinsic to the educational process; and new and updated classrooms and lecture halls.

paths on his own.

A passionate supporter of the sciences basic to medicine, Dan strengthened the HMS Quadrangle departments by recruiting eminent scholars as department heads, increasing the

scope and size of the faculty, and providing faculty researchers with new laboratory spaces. He promoted an organization of departments that reflected the thrust of contemporary biomedical research as opposed to a recapitulation of a list of obsolete course titles. He also provided for an increasing number of graduate students in the Division of Medical Sciences and a more coherent framework for their courses of study.

Dan established two departments that helped acknowledge the importance of the social sciences to medicine: the Department of Social Medicine, since renamed Global Health and Social Medicine, and the Department of Health Care Policy. And he founded the Department of Ambulatory Care and Prevention (now Population Medicine), which underscored how important it was for medical education to include experience with non-hospitalized patients.

Dan believed in sharing the lessons learned at HMS with the broader medical and scientific community. This attitude

led to several national and international initiatives, including the Harvard Macy Institute for medical educators and the Giovanni Armenise-Harvard Foundation for promoting collaboration with scientists at leading institutions in Italy.

Despite his many accomplishments, Dan had his share of frustrations and unfulfilled wishes. He had hoped that the student societies would serve as a source for curricular innovation, yet, except for contributions by the Harvard-MIT Division of Health Sciences and Technology (now the London

> Society), this did not happen. Fearing an unhealthy competition for patients, Dan also sought to build a plan for cooperative activity among the School's affiliated hospitals. This initiative too was blunted.

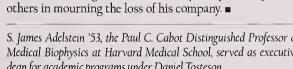
His interest in the natural and life sciences was early and intense. During college and medical school, Dan was intrigued by salt and water homeostasis and took a year off from his medical school studies to work with the cardiovascular physiologist Eugene Landis. During his residency at The Presbyterian Hospital in New York City, Dan became curious about red-blood-cell transport, a focus that led to an enduring interest in general physiology and, in particular, membrane biology. He continued to work with artificial and red-blood-cell membranes during his fellowships in Brookhaven and Cambridge and at the National Institutes of

Health and, subsequently, during faculty stays at Washington and Duke universities. He brought that interest, one he shared with his wife, Magdalena, to HMS when he returned as its dean.

Dan loved to talk about biomedical science, and his enthusiasm for discovery was infectious. He was a great advocate for HMS; he took its causes seriously and wanted his listeners to feel them also. This sincerity is what made him such an effective spokesperson and fundraiser; under his stewardship the School's endowment burgeoned.

Dan is survived by his wife; a brother, Thomas; his sons, Tor and Joshua; his daughters, Ingrid, Zoe, Heather, and Carrie; and five grandchildren. They are joined by many

S. James Adelstein '53, the Paul C. Cabot Distinguished Professor of Medical Biophysics at Harvard Medical School, served as executive dean for academic programs under Daniel Tosteson.





#### OBITUARIES

Emerson Day

1938 Died October 21, 2008, at the age of 95, in Wilmette, Illinois. Day served as a flight surgeon for the U.S. Army Air Forces' Air Transport Command during World War II. He was director of the Strang Cancer Prevention Clinic from 1950 to 1963 and chief of the preventive medicine division at the Sloan-Kettering Institute from 1954 to 1964, both in New York City. Day was also a professor of medicine at Northwestern University and an attending and visiting physician at Northwestern Memorial Hospital in Chicago. Day was predeceased by his first wife, Ruth. He is survived by his second wife, Gerry; five children, Tad, Bob, Nancy, Bonnie, and Shery; thirteen grandchildren; and four great-grandchildren.

Laurence G. Wesson

**1942** Died September 2, 2008, at the age of 90, in Scarborough, Maine. A leading authority on kidney physiology, Wesson was also an expert in entomology. During World War II, he was an artillery battalion surgeon with the rank of captain in the U.S. Army. He was among the first Americans to liberate the Dachau concentration camp. After leaving the Army, Wesson held various teaching positions at New York University College of Medicine. In 1962 he accepted an appointment as a professor of medicine to create the Division of Nephrology at Jefferson Medical College in Philadelphia. He published the standard textbook Physiology of the Human Kidney in 1969, and he retired in 1987. Wesson is survived by his wife of 60

years, Eleanor; four children, Laurence, Anne, Robert, and John; and eight grandchildren.

Douglas R. Morton

1944 Died September 9, 2008, at the age of 88, in Elgin, Illinois. Board certified in general, thoracic, and cardiovascular surgeries, Morton ran a private general surgical practice in Elgin. He served in the U.S. Army and was chief of surgery at Fort George Wright in Spokane, Washington. He is survived by his wife of nearly 65 years, Mary; their children, Douglas, Jr., Carol Fletcher, Sarah Semich, and Bruce; nine grandchildren; and four great-grandchildren.

H. Stanley Bennett

1945 Died October 4, 2008, at the age of 87, in Lake Oswego, Oregon, of a ruptured abdominal aortic aneurysm. Bennett served two years with the U.S. Army Medical Corps in post-World War II Germany. In 1953 he helped form Associated Physicians, a multispecialty clinic. After retiring in 1986, Bennett and his wife moved to Togo, where, as a Peace Corps doctor, he oversaw health care for volunteers in Togo, Benin, and Ghana. After moving to Lake Oswego in 1988, he continued his volunteer service at the Old Town Clinic in Portland, Oregon. Bennett was predeceased by a son, James. He is survived by his wife of 65 years, Mildred; a son, David; a daughter, Barbara Berger; five grandchildren; and one great-grandchild.

D. Carleton Gajdusek

1946 Died December 12, 2008, at the age of 85, in Tromsø, Norway. Gajdusek won the 1976

Nobel Prize in medicine for his work on what are now known as prion diseases. In 1951, Gajdusek was drafted into the U.S. Army and was sent to the Walter Reed Army Medical Service Graduate School as a research virologist, spending time at the Institut Pasteur in Tehran. He later traveled to Australia. where he performed postdoctoral work at the Walter and Eliza Hall Institute of Medical Research. It was on his way home from that trip that Gajdusek learned of the Fore tribe of New Guinea, which was slowly being wiped out by kuru, a degenerative brain disease. In 1957, he identified the tribe's custom of eating the infected bodies and brains of deceased members as the cause of kuru, a discovery that won him the Nobel Prize 19 years later. Gajdusek led the brain studies laboratory at the National Institute of Neurological Disorders and Stroke from 1970 until 1997. He is survived by many adopted sons and daughters and two nephews.

John M. R. Bruner

**1949** Died May 28, 2008, at the age of 82, in Groton, Massachusetts, of pancreatic cancer. Bruner served as a medical officer in the U.S. Navy during the Korean War before settling in Groton, where he practiced medicine for ten years. He specialized in anesthesiology at what was then Peter Bent Brigham Hospital. He was later on the Massachusetts General Hospital staff and taught at HMS. Bruner is survived by his wife of 58 years, Barbara; three children, Temple Bruner

Staples, John, and Bradford; and six grandchildren.

Robert Byron Giles, Jr.

1949 Died December 16, 2008, at the age of 87, in Dallas, Texas. Giles was the former chief of staff at Presbyterian Hospital in Dallas and a former assistant professor of medicine at the University of Texas Southwestern Medical School. During World War II, he did research in the nuclear physics department at the Massachusetts Institute of Technology for the War Manpower Commission. He served as a first lieutenant in the 8228th MASH unit during the Korean War; he received a commendation for his work in the unit's hemorrhagic fever center. Giles later had a private internal medicine practice in Dallas for 40 years. Giles was predeceased by his first wife, Patricia, in 1992. He is survived by his second wife, Ann; four children, Caroline Banks, Ben, Richard, and Phoebe; five grandchildren; and three great-grandchildren.

Albert F. Hendler

**1949** Died November 17, 2008, at the age of 82, in Dallas, Texas. Hendler's internship and residency were interrupted by his two years of service in the U.S. Army Medical Corps. He later spent one year at the Dallas Veterans Administration Medical Center before opening a private internal medicine practice in Casa Linda. Hendler was the primary medical support for the first open heart surgery performed at Baylor Hospital in Dallas. He was a clinical professor of medicine at the University of Texas Southwestern Medical School from 1970 until his retirement in 1999. Hendler was predeceased by his son

Charles in 2006. He is survived by his wife of 60 years, Pauline; seven children, Robert, Richard, Katherine Huske, Gloria, Thomas, Sarah Feagin, and Pauline Pagel; and 19 grandchildren.

Lewis Bloomingdale

**1950** Died December 8, 2008, at the age of 89, in Norwood, Massachusetts, of an intestinal obstruction. Bloomingdale was a psychiatrist whose grandfather founded the Bloomingdale's department store chain. He served as a chemical engineer with the U.S. Army in the Pacific theater during World War II. Bloomingdale had a private practice in Scarsdale. New York, with his wife, Eileen, a clinical psychologist. He retired in 1998. Bloomingdale was also president of the Psychiatric Society of Westchester and taught on the faculty of New York Medical College for many years. His major research interest was attention deficit hyperactivity disorder, which he traveled to four other continents to study. Bloomingdale was predeceased by his wife in 2000. He is survived by a son, Kerry '77; three grandchildren; and a great-granddaughter.

Thomas B. Hayes

**1950** Died August 24, 2008, at the age of 86, in North Andover, Massachusetts. Hayes served as a pharmacist mate and neuropsychology technician in the U.S. Navy during World War II and as a post surgeon in the U.S. Army in Japan during the Korean War. Hayes was chief of surgery at Lawrence General Hospital from 1965 to 1968 and president of Bon Secours Hospital in Methuen, Massachusetts, from 1971 to 1973. He also served as that hospital's director of emergency medical services. Hayes is survived by his wife, Loretta Spires; his daughters, Judi Mancini, Mary Beth Hayes Rentschler, and Cathy Hayes Lee; his sons, Thomas, Ir., Michael, Kevin, John, Daniel, Brian, and Patrick: fourteen grandchildren; and six greatgrandchildren.

Federico Mora

1950 Died October 9, 2008, at the age of 82, in Albuquerque, New Mexico. Mora received training in general surgery and neurology at Massachusetts General Hospital before serving two years in the U.S. Air Force as a neurosurgeon. He ran a private neurosurgery practice in Albuquerque from 1959 until 1995. Mora held staff appointments at Bernalillo County Indian Hospital, Bernalillo County Medical Center, and the Albuquerque Veterans Administration Medical Center. After closing his practice, Mora participated in neurosurgical missions to Guatemala, his birthplace, sponsored by Healing the Children. He also dedicated many hours to preparing paleontological specimens for the New Mexico Museum of Natural History and Science. Mora is survived by his wife of 57 years, Virginia; his children, Federico III, Clara Luz Nixon, Ana Maria Waller, Claudia Riciputi, and Juan; nine grandchildren; and one great-grandchild.

<u>Evelyn Waitzkin</u> **1950** Died October 21, 2008, at the age of 90. A psychiatrist, Waitzkin was a member of the second class of female stu-

dents at HMS. She was prede-



#### OBITUARIES

ceased by her husband, Leo. Waitzkin is survived by three daughters, Ellen, Carol, and Susan; and five grandchildren.

Christopher C. Fordham III **1951** Died August 14, 2008, at the age of 81, in Chapel Hill, North Carolina. Fordham was a former chancellor of the University of North Carolina-Chapel Hill. He joined that university's medical school in 1958 and became its dean in 1971. As chancellor from 1980 to 1988, he helped create the Area Health Education Centers program, a collection of rural medical centers across North Carolina. He also oversaw a major undergraduate curriculum revision and a renewed focus on private giving. Fordham is survived by his wife, Barbara; three daughters, Pam Fordham Richey, Susan Fordham Crowell, and Betsy Fordham Templeton; six grandchildren;

and seven great-grandchildren.

H. Douglas Collins 1952 Died October 14, 2008, at the age of 80, in Hanover, New Hampshire, of Alzheimer's disease. After a public health service stint in Anchorage, Alaska, he established a private practice in Caribou, Maine. From 1975 to 1980, he directed the Central Maine-Dartmouth Family Practice Residency in Augusta. Collins was predeceased by his first wife, Helen. He is survived by his second wife, Mary; his children, Herschel, Gordon, and Linda; his stepchildren, Thomas Dresser, Peter Dresser, and Jane Howe; eight grandchildren; six step-grandchildren; and one great-grandchild.

Thomas F. Dolan, Jr.

1953 Died September 28, 2008, at the age of 80, in Madison, Connecticut, after a prolonged illness. Dolan completed his medical training at Children's Hospital Boston and at the National Institutes of Health in Bethesda, Maryland. He spent 40 years on the active faculty of the Yale School of Medicine and as an attending physician at Yale-New Haven Hospital in Connecticut. He was also director of Yale's cystic fibrosis clinic for 25 years. He was a past president of the American Academy of Pediatrics. Dolan was predeceased by his wife, Margaret, and a son, Christopher. He is survived by three daughters, Karen Garner, Maureen, and Evelyn; a son, Kevin; and four grandchildren.

Jay Katz

1953 Died November 17, 2008, at the age of 86, in New Haven, Connecticut, of heart failure. A physician who focused on medical ethics, Katz taught psychiatry at Yale School of Medicine and was assistant professor of psychiatry and law at Yale Law School until his retirement in 1993; he continued to teach as an emeritus professor. In 1972, Katz was named to a federal panel to investigate the 1932 Tuskegee Syphilis Study. The panel described the study as "ethically unjustified," yet Katz believed the report didn't go far enough, stating that study participants had been "exploited, manipulated, and deceived." Katz was predeceased by his first wife, Esta, in 1987. He is survived by his second wife, Marilyn Arthur; his son, Dan; two daughters,

Sally and Amy Goldminz; two stepdaughters, Mary Whitfield and Emily Whitfield; and four grandchildren.

Robert Katzman

**1953** Died September 16, 2008, at the age of 82, at his home in La Jolla, California, after a long illness. An internationally known leader in Alzheimer's disease research, Katzman served as the chair of neurology at the Albert Einstein College of Medicine in the Bronx from 1964 to 1984, when he helped establish the Shiley-Marcos Alzheimer's Disease Research Center at the University of California, San Diego. Katzman held the Florence Riford Chair for Research in Alzheimer's Disease there from 1984 until his retirement in 1995. He co-edited Basic Neurochemistry in 1972. Four years later, his landmark editorial in Archives of Neurology was the first to state the prevalence and severity of Alzheimer's disease. He was also a founder of the national Alzheimer's Association and served as president of the American Neurological Association in 1985. Katzman is survived by his wife, Nancy; two sons, David and Daniel; and one grandson.

Donald P. Zangwill

**1953** Died October 7, 2008, at the age of 80, in Mt. Lebanon, Pennsylvania, of mesothelioma. Zangwill worked in private practice in internal medicine for 35 years before retiring in 2000. He was a frequent seeker of adventures around the world. Zangwill was predeceased by his first wife, Estelle. He is survived by his loving companion and best friend,

Carol Boll; his former wife, Grace; his children, Andrew, Rhonda, Kenneth, and Leonard; and three grandchildren.

\_ James A. Gibson

1954 Died September 15, 2008, at the age of 83, at his home in Hinsdale, Illinois. Gibson was a co-founder of the Institute of Family Therapy in Chicago and had a private practice in Hinsdale. Gibson was predeceased by two daughters, Mary Ellen and Lisa Erin. He is survived by his wife of 49 years, Barbara; three daughters, Suzanne, Gina Fielder, and Julie; and three granddaughters.

Edward D. Holyoke

**1954** Died September 30, 2008, at the age of 79, at his home in Sandy Pond, New York. Holyoke served in the U.S. Army from 1956 to 1958 in Kyoto, Japan, retiring as a colonel in the Army Medical Reserves. Holyoke was chief of surgical oncology at Roswell Park Memorial Institute in Buffalo, New York, where he studied the use of interferon as a cancer treatment. In 1991, he joined the Veterans Administration in Togus, Maine, where he served as chief of staff. He was later chief of staff for the Veterans Administration Hospital in Syracuse, New York, and continued to work there as a research grant consultant until several months before his death. Holyoke is survived by his wife, Judith; four daughters, Amanda Neal, Rebecca Sumner, Melissa Gartz, and Cassandra Bluff; two sons, John and Edward; and nine grandchildren.

Fugene Nobles, Jr.

1954 Died December 22, 2008, at the age of 79, in Memphis, Ten-

nessee. Nobles served as a captain in the U.S. Army during the Korean War and as chief of surgery for the 44th MASH unit. He joined the Department of Surgery at Baptist Memorial Hospital in Memphis, where he worked for 38 years. Nobles was the chairman of that hospital's Department of Surgery and Accreditation Committee, as well as president of its medical staff. He also served as president of the Memphis Surgical Society and of the Southern Surgeons Club. He was an avid inventor and held three patents. He is survived by his wife of 47 years, Gloria; two daughters, Helen Bird and Lil Rudd; and five grandchildren.

Parvin S. Farmanfarmaian

1956 Died April 22, 2009, at the age of 77, at her home in Princeton, New Jersey, of pancreatic cancer. Farmanfarmaian was among the first cadre of faculty to join Rutgers Medical School, now called the Robert Wood Johnson Medical School, in Princeton in 1968. As fellowship director for the hematology and oncology program at that school, Farmanfarmaian trained scores of hematology and oncology specialists during the past four decades. She developed the New Jersey Regional Hemophilia Program and served as its director starting in 1976. Farmanfarmaian is survived by her husband of 50 years, Allahverdi Farmanfarmaian; two daughters, Lara Terry and Kimya Harris; and four grandchildren.

Malcolm H. Moss

1956 Died October 17, 2008, at the age of 77, at his home in Tampa, Florida. Moss served as a captain in the U.S. Air Force, stationed in Japan. He practiced

pediatrics in Englewood, New Jersey, for 30 years and was chief of pediatrics at Englewood Hospital from 1979 to 1989. After closing his practice, he became a medical director at Cigna Healthcare in New Jersey. He transferred to Florida in 1994. Moss is survived by his wife of 45 years, Sylvia; sons Andrew and Jonathan; and four grandchildren.

Geoffrey R. Paul

1956 Died October 28, 2008, at the age of 79, in San Francisco, California. Born in Sydney, Australia, Paul founded the Anzac Peace Prize and the Anzac of the Year national awards, annual prizes given to ordinary Australians for efforts toward global peace, in 1976. Paul was also a physician at Kaiser Permanente in San Francisco for 25 years. He is survived by his wife, Sharon.

Charles W. Fairfax II

**1957** Died December 9, 2008, at the age of 77, in South Dartmouth, Massachusetts. Fairfax worked as a radiologist at St. Luke's Hospital in New Bedford, Massachusetts, for 31 years, including many years as chief of radiology, until his retirement in 1995. He helped establish that hospital's School of X-Ray Technology and was a member of several professional organizations, including the American College of Radiology, which named him as a fellow in 1978. Fairfax is survived by his wife of 50 years, Eleanor ("Sue"); five children, Diana Fairfax Miller, Laura Fairfax McDonough, Christopher, Peter, and Josh; and twelve grandchildren.

Robert W. Shavelson

1958 Died June 8, 2009, at the age of 75, at his home in New Jersey.

#### **OBITUARIES**

Shavelson practiced internal medicine and served in Vietnam. He was predeceased by his wife of 43 years, Sonia, in 1998. Shavelson is survived by his three children, Pamela, Patti, and Robert, Jr.; and two grandchildren.

David V. Heisterkamp **1964** Died January 26, 2009, at the age of 69, in Denver, Colorado, in his sleep. Heisterkamp trained in anesthesia at the University of Pennsylvania before serving as a lieutenant commander in the U.S. Navy from 1968 to 1970. He moved to Denver in 1970 and practiced anesthesia, first at the University of Colorado Medical Center, then with the Metz Group and with Colorado Anesthesia Consultants. He retired in 2005 to spend more time with his family. Heisterkamp is survived by his wife, Roberta; his five children, David, Wendy Wiehardt, Rebecca, Christo-

Gerald Colman

grandchildren.

pher, and Charles; and four

**1966** Died December 26, 2008, at the age of 68, at his home in Albany, New York. Colman had been a lieutenant commander in the U.S. Navy and the officer in charge at the South Vietnamese Provincial Hospital in Quang Tri from 1969 to 1971. His service earned him the Vietnamese Service Medal, the Republic of Vietnam Medal of Honor, the Cross of Gallantry, and the Public Health Medal. In later years, he made several trips back to Vietnam—as well as to China, Russia, and the Philippines—as part of Operation Smile, performing

surgery on children with cleft palates and cleft lips. Colman was chief of plastic surgery at the former Child's Hospital and St. Peter's Hospital, both in Albany, and taught as an associate professor at Albany Medical Center. He practiced with the Plastic Surgery Group in Albany for more than 30 years. He also served on the Board of Trustees of the Albany Jewish Community Center, which recently honored him with a Pillars Award. Colman is survived by his wife, Ruth; five children, David, Jonathan, Adam, Benjamin, and Rachel; and one grandson.

James Edward McLennan **1967** Died September 30, 2008, at the age of 68, in Providence, Rhode Island. McLennan completed his residency in neurosurgery at Brigham and Women's Hospital and Children's Hospital Boston. He had been a physician at Miriam Hospital and Roger Williams Hospital in Providence since 1981. He also served as a clinical associate professor at the Warren Alpert Medical School of Brown University. McLennan is survived by his wife, Karen Jacobsen, and two daughters, Iill and Jenny.

Richard Alan Kaiser

1969 Died November 17, 2008, at the age of 63, in West Orange, New Jersey. Beginning in 1971, Kaiser served several years in the U.S. Navy and rose to the rank of lieutenant commander aboard the nuclear submarine the U.S.S. Will Rogers. He maintained a private practice in general and pediatric surgery in Montclair, New Jersey, retiring in 2004. Kaiser

is survived by his wife of 40 years, Debra; a daughter, Hilary Grove; a son, David; and two grandchildren.

Barbara Mallinckrodt Osborne

1969 Died March 29, 2009, at the age of 65, at her home in Houston, Texas, after living with Alzheimer's disease for many years. Osborne completed her training at Massachusetts General Hospital and Beth Israel Deaconess Medical Center in Boston, and chose a career in pathology, specializing in lymphomas. In 1975, she moved to Houston, where she practiced pathology and

hematopathology for nearly 20

Siegel, and four grandchildren.

years. She is survived by her children, Jonathan and Bizet

Donald Michael Vickery **1969** Died November 22, 2008, at the age of 64, in Evergreen, Colorado, of lung cancer. A pioneer in the self-care and wellness movement, Vickery, a nonsmoker, was also a lifelong crusader against tobacco. He founded the nonprofit Center for Consumer Health Education, now known as the Self-Care Institute, in Evergreen. In 1984, he started the Center for Corporate Health in Reston, Virginia. Vickery wrote and co-wrote numerous books about wellness, and he founded Health Decisions International, a self-diagnosing software tool for doctors and patients. In 2003 he received the American College of Preventive Medicine Lifetime Achievement Award. Vickery is survived by his wife, Carol; a daughter, Meredith; two sons, Andrew and Michael; and two grandsons.

#### \_\_\_John Richardson

**1970** Died November 13, 2008, at the age of 64, in Little Rock, Arkansas, after an extended battle with cancer. Following his medical training, Richardson joined the U.S. Public Health Service and was stationed in Galveston, Texas. He later joined the National Institutes of Health, where he conducted research on cholesterol. He eventually returned to Texas, where he taught at the University of Texas Health Science Center in San Antonio and practiced medicine at Central Texas Nephrology Associates in Waco. Richardson is survived by his wife, Martha.

Suzanne Riggs

**1972** Died April 28, 2009, at the age of 62, in Providence, Rhode Island, after a battle with cancer complicated by kidney disease. Riggs spent six months studying in Colombia before completing her residency in pediatrics and a fellowship in adolescent medicine at Children's Hospital Boston. She was a physician at Harvard University Health Services and at Children's, where she founded the Young Parents Program. She later moved to the Brown University School of Medicine in Providence to start its Division of Adolescent Medicine. She became professor of pediatrics at that school and served as medical director of clinical services at the Rhode Island Training School for more than 20 years. Riggs was known nationally for her work in the eating disorders field. Riggs is survived by her children, Amy Hennessy, Rob Lewis, and Jane Lewis.

#### \_Mitchell B. Max

**1974** Died October 22, 2008, at the age of 59, at his second home in

Pittsburgh, Pennsylvania. His death was ruled a suicide. A neurologist and authority on the genetic basis of pain, Max was a senior investigator with the Center for Pain Research at the University of Pittsburgh Medical Center. He had previously been a researcher at the National Institutes of Health, where he directed the Pain Research Clinic, and a captain in the U.S. Public Health Service. Max is survived by his wife of 23 years, Lisa, and two daughters, Rachel and Laura.

#### Andrew Hannas

1976 Died September 24, 2009, at the age of 58, in his home in Lafayette, Indiana, from injuries suffered in a fall. Hannas worked for the Kansas State Department of Health and taught English, Latin, and Greek at Purdue University. Hannas was predeceased by a sister, Margaret. He is survived by brothers Mike and Jacob and sisters Molly and Polly Silverman.

#### Peter Einstein

1978 Died suddenly September 22, 2008, at the age of 59, in St. Louis, Missouri. A pediatric cardiac surgeon and immunologist, Einstein founded the Transposition Study Group, where he pioneered an innovative training model for pediatric cardiac surgery. He also founded the Children's Heart Project International, which made resources available for children's heart surgeries in the developing world. Einstein is survived by his wife, Kim Rosenfield, and his children, Jesse, Eric, Tracy, and Lisa.

#### Bruce Van Boeckel

**1978** Died February 6, 2009, at the age of 56, in Greenfield, Massa-

chusetts, following a fourmonth bout with cancer. Van Boeckel did a residency in internal medicine at George Washington University Hospital before moving to Western Massachusetts, where he was employed by the Sisters of Providence at Farren Memorial Hospital. In 1990, Van Boeckel and his partners formed Connecticut River Internists in Turners Falls, Massachusetts. He worked there until his retirement in 2001. In 2004, he helped found the Hospice of Franklin County and served as its medical director until his death. He was a strong believer in palliative care, and during his illness he became a beneficiary of the hospice he had helped create. Van Boeckel is survived by his wife of 25 years, Terry.

#### Edward B. Bromfield

**1983** Died May 10, 2009, at the age of 58, in Newton, Massachusetts. A recognized expert in the field of epilepsy, Bromfield was an HMS associate professor of neurology and chief of the Division of EEG, Epilepsy, and Sleep Neurology at Brigham and Women's Hospital. He joined the HMS faculty in 1993 after undertaking a two-year fellowship in epilepsy and EEG at the National Institute of Neurological Disorders and Stroke in Bethesda, Maryland. The American Epilepsy Society honored him with the 2007 J. Kiffin Penry Award for Excellence in Epilepsy Care. In 1999, Bromfield helped found Camp Wee-Kan-Tu, the first overnight summer camp program in New England solely for children with epilepsy; he served as the camp's medical director. Bromfield is survived by his wife, Terry, and his sons, Daniel and Benjamin.

#### Game Plan

hospital, his creatinine level was ten times higher than normal. He was now paying the costly price of a long history of uncontrolled hypertension. His kidneys were shot, and he faced a certain future on dialysis.

The wrinkle in the story was that the patient—I'll call

him Fred—was refusing surgery to create an arteriovenous fistula that would allow us to filter his blood. Psychiatrists had ruled Fred competent to make his own decisions, and he was now testing our team's negotiation skills. A daily parade of doctors at every level of training kidney specialists, general medicine doctors, fellows, residents, and, me, the medical student-would visit with him and repeat variations on a theme: He might feel fine now, but kidney failure would kill him unless he went on dialysis. He would respond to us all in the same way: "I feel fine. I don't need dialysis, and I don't need surgery."

Fred was at once frustrating and perplexing. Each day we debated hypotheses about the reasons for his refusal. Was he suspicious of our motives? Our competence? Our judgment? Was he afraid of surgery? Tired of living? Our debate continued until one morning, when our team of doctors approached him during rounds. "I want dialysis," Fred said, "and I'll meet with the surgeons."

Why the sudden change?

"I was thinking about a picture I saw in *Sports Illustrated* of Hank Gathers," Fred told us. "He just collapsed and died on the court. I don't want that to be me. His death was so awful for people to watch. I don't want to be another Hank Gathers or Reggie Lewis." None of the other members of my team knew who these basketball giants were—and they didn't care. They couldn't afford to let the patient change his mind again, so they scheduled an immediate surgical consult.

As an avid sports fan, I knew that Gathers was a college-basketball phenom who had died suddenly during a championship playoff game, and that Lewis was the young Boston

Celtics star who had collapsed and died one day during practice. From the grave, Gathers and Lewis were accomplishing what doctors alone could not: saving Fred's life.

Fred's sudden change in thinking underscored for me the incredible influence that athletes have in shaping the way we think about our health. As icons of extreme physical well-

being, professional athletes remind us of the pinnacles of human performance, but also of our own frailty. While they express the virtues of human perseverance and intense training, they can also bring to light the egalitarian quality of disease—striking anyone, even optimally conditioned professional athletes, at any time. In doing so, they help patients like Fred understand disease, feel less alone with their diagnoses, and persist in treatment when they feel like giving up.

While athletes like Gathers and Lewis remind us of our mortality, others call attention to our body's innate capacity to cope with disease and to heal. When Magic Johnson returned to the basketball court after announcing he had HIV, he helped destigmatize the disease, eased our fears of infectivity, and made us realize that those testing positive for the virus could still lead vigorous lives. When Red Sox pitcher Jon Lester publicly faced a life-threatening cancer diagnosis and fought back to return to top form, he allowed us the realistic

FINAL SHOT: Hank Gathers, a basketball star for Loyola Marymount University, collapsed and died during a tournament game. An autopsy revealed that he suffered from hypertrophic cardiomyopathy, a heart-muscle disorder.

hope that we, too, might recover and live normally.

Sports journalists, by chronicling the stories of the illnesses of athletes, and professional athletes, by sharing those stories with us, perform an invaluable public health service. They help us understand and cope with disease in ways that caution, reassure, and inspire us. ■

Sachin H. Jain '06, a resident in internal medicine at Brigham and Women's Hospital, was recently named special assistant to David Blumenthal '74, national coordinator for health information technology at the U.S. Department of Health and Human Services.



#### Harvard Medical Alumni Association

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of 1836, was for from the retiring, measured stereotype so commonly conjured for the Victorian ero. His lively, inquiring mind led him to provide engoging discourses on such topics os the contogiousness of puerperol fever, the importance of the U.S.S. Constitution ("Old Ironsides"), and the provincial view of those in his hometown—his belief that Bostonians considered their State House the hub of the solor system led to the city's nicknome, "the Hub."

Holmes was o mon of science, o mon of letters, and, occording to o recent symposium of the Froncis A. Countwoy Librory of Medicine, o mon of questions. Organized to commemorate the two-hundredth anniversary of the birth of the former Horvard Medical School deon, "Oliver Wendell Holmes and the Spirit of Skepticism" celebroted his life, his occomplishments, and the continuing relevance of his literory and scientific contributions.

To view videos of the symposium, visit olumnibulletin. med.horvord.edu/history/people/holmes.php.